

EPA Superfund
Record of Decision:

SUMMIT NATIONAL
EPA ID: OHD980609994
OU 01
DEERFIELD TOWNSHIP, OH
06/30/1988

This ROD has an associated ESD.

RECORD OF DECISION
SUMMARY OF REMEDIAL ALTERNATIVE SELECTION
SUMMIT NATIONAL SITE

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SITE: SUMMIT NATIONAL - DEERFIELD, OHIO

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STATEMENT OF BASIS AND PURPOSE

THE SELECTION OF THE REMEDY IS BASED ON THE ADMINISTRATIVE RECORD FOR THE SUMMIT NATIONAL SITE. ATTACHMENT 1 CONTAINS THE RESPONSIVENESS SUMMARY, AND ATTACHMENT 2 CONTAINS THE INDEX TO THE ADMINISTRATIVE RECORD. THE DECISION DOCUMENT REPRESENTS THE SELECTED REMEDIAL ALTERNATIVE FOR THE SUMMIT NATIONAL SITE. IT WAS DEVELOPED IN ACCORDANCE WITH THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (CERCLA), AS AMENDED BY THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA), AND CONSISTENT WITH THE NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN TO THE EXTENT PRACTICABLE.

THE REMEDIAL ACTION WILL REQUIRE FUTURE OPERATION AND MAINTENANCE ACTIVITIES TO ASSURE THE CONTINUED EFFECTIVENESS OF THE REMEDY. THESE ACTIVITIES WILL BE CONSIDERED ELIGIBLE FOR TRUST FUND MONIES FOR A PERIOD NOT TO EXCEED 1 YEAR. WITH RESPECT TO RESTORATION OF GROUND OR SURFACE WATER QUALITY, THE OPERATION AND MAINTENANCE COSTS WILL BE ELIGIBLE FOR TRUST FUND MONIES FOR A PERIOD OF UP TO 10 YEARS. I HAVE ALSO DETERMINED THAT THE ACTION BEING TAKEN IS APPROPRIATE, WHEN BALANCED AGAINST THE AVAILABILITY OF TRUST MONIES FOR USE AT OTHER SITES. THIS RECORD OF DECISION ADDRESSES ALL OPERABLE UNITS FOR REMEDIAL ACTION AT THE SUMMIT NATIONAL SITE IN DEERFIELD, OHIO.

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DECLARATIONS

CONSISTENT WITH THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980, AS AMENDED BY THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA), AND THE NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN TO THE EXTENT PRACTICABLE, I HAVE DETERMINED THAT THE SELECTED ALTERNATIVE FOR REMEDIATION OF THE SUMMIT NATIONAL SITE, IS PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT; MEETS APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS; AND IS COST-EFFECTIVE.

THE OHIO ENVIRONMENTAL PROTECTION AGENCY HAS BEEN CONSULTED THROUGH OUT THE REMEDIAL INVESTIGATION, FEASIBILITY STUDY, AND RECORD OF DECISION PROCESS. THIS RECORD OF DECISION ADDRESSES ALL CONCERNS AT THE SITE, AND IS THE PROPOSED FINAL REMEDIAL ACTION FOR THE SUMMIT NATIONAL SITE.

THIS REMEDY SATISFIES THE STATUTORY PREFERENCE FOR REMEDIES THAT EMPLOY TREATMENT THAT REDUCES TOXICITY, MOBILITY, AND VOLUME AS A PRINCIPAL ELEMENT, AND UTILIZES PERMANENT SOLUTIONS AND ALTERNATE TREATMENT TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE. TO ENSURE THE LONG-TERM EFFECTIVENESS AND PROTECTIVENESS OF THE SELECTED REMEDY, A REVIEW WILL BE CONDUCTED WITHIN 5 YEARS AFTER COMMENCEMENT OF THE REMEDIAL ACTION.

DATE

VALDAS V. ADAMKUS

06/30/88

REGIONAL ADMINISTRATOR

U.S. ENVIRONMENTAL
PROTECTION AGENCY
REGION V

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION
SUMMIT NATIONAL SITE

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SITE LOCATION AND DESCRIPTION

THE SUMMIT NATIONAL SITE IS LOCATED IN DEERFIELD TOWNSHIP, PORTAGE COUNTY, OHIO, APPROXIMATELY 45 MILES SOUTHEAST OF CLEVELAND AND 20 MILES WEST OF YOUNGSTOWN (FIGURE 1).

THE SUMMIT NATIONAL SITE IS APPROXIMATELY RECTANGULAR IN SHAPE AND OCCUPIES APPROXIMATELY 11.5 ACRES. IT IS LOCATED AT THE SOUTHEAST CORNER OF THE INTERSECTION OF OHIO ROUTE 225 TO THE WEST AND U.S. ROUTE 224 TO THE NORTH (FIGURE 2).

THE SITE WAS A COAL STRIP MINE AND CONTAINED A COAL WASH POND AND COAL STOCK PILE PRIOR TO ITS USE AS AN INCINERATOR SITE. THE COAL TIPPLE REMAINS AS A 15 FT. HIGH EMBANKMENT IN THE NORTHWEST CORNER OF THE SITE WITH A LOADING DOCK AND CONCRETE DEBRIS REMAINING FROM THE ORIGINAL COAL PROCESSING FACILITIES. OTHER PROMINENT FEATURES ON SITE ARE TWO PONDS LOCATED IN THE MIDSECTION OF THE SITE, AN ABANDONED INCINERATOR AND TWO BUILDINGS IN THE SOUTHEAST CORNER, A SCALE HOUSE IN THE NORTHWEST CORNER, AND TWO DILAPIDATED BUILDINGS IN THE NORTHEAST CORNER. ADDITIONALLY, IT IS ESTIMATED THAT APPROXIMATELY 900-1,600 DRUMS AND THREE KNOWN TANKS AND ONE SUSPECTED TANK REMAIN BURIED ON SITE. LITTLE VEGETATION IS GROWING ON SITE SINCE MOST OF THE SITE WAS GRADED FOLLOWING PERIODIC SURFACE CLEANUP ACTIVITIES WHICH WERE PERFORMED FROM 1980 THROUGH 1982. THE SITE IS ENCLOSED BY A 6 FT. HIGH FENCE WITH TWO LOCKED GATES FOR ENTRANCE FROM ROUTE 225.

THE AREA IMMEDIATELY SURROUNDING THE SITE HAS BEEN DEVELOPED FOR A VARIETY OF USES, PRIMARILY RURAL RESIDENCES, LIGHT INDUSTRIES AND AGRICULTURE. SEVERAL RESIDENCES ARE LOCATED TO THE NORTH, EAST AND WEST WITHIN 500 FT. OF THE SITE. A ROLLER SKATING RINK IS IMMEDIATELY NORTH OF THE SITE. LIGHT INDUSTRIES IN THE AREA INCLUDE A FUEL DISTRIBUTOR, A CEMENT PLANT AND MANUFACTURER OF SEPTIC TANKS, TWO SANITARY LANDFILLS, AND USED TIRE STORAGE LOTS. UNUSED AREA NEAR THE SITE ARE EITHER WOODED OR UNVEGETATED STRIP MINED LANDS.

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SITE HISTORY AND ENFORCEMENT ACTIVITY

ALL INFORMATION PERTAINING TO SITE HISTORY WAS OBTAINED FROM AND BASED ON THE EXISTING SUMMIT NATIONAL REMEDIAL ACTION MASTER PLAN (RAMP) (CH2M HILL, AUGUST 1983) AND THE OHIO EPA FILES AVAILABLE FROM THE TWINSBURG, OHIO OFFICE.

IN JUNE 1973, SUMMIT NATIONAL LIQUID SERVICES OBTAINED A "PERMIT TO INSTALL" AN 18,000 GALLON PER MONTH LIQUID WASTE INCINERATOR FROM THE OHIO EPA. IN APRIL 1974 AN OPERATING PERMIT FOR THE INCINERATOR WAS ISSUED BY THE OHIO EPA. THE FACILITY, CALLED SUMMIT NATIONAL LIQUID SERVICES, RECEIVED LIQUID WASTES FROM VARIOUS MANUFACTURING AND CHEMICAL COMPANIES. THE WASTES WERE EITHER DELIVERED IN BULK USING TANKER TRUCKS OR IN 55 GALLON DRUMS ON FLATBED TRUCKS.

ONCE BROUGHT TO THE FACILITY, WASTES WERE STORED UNPROTECTED IN 55 GALLON DRUMS, AN OPEN PIT REFERRED TO AS THE POLYMER PIT, OR BULK TANKS OF VARYING SIZE. MANY WASTES WERE MIXED WITH FLAMMABLE LIQUIDS AND INCINERATED. SOME WASTES WERE BURIED ON SITE, WHILE OTHERS WERE DUMPED OR LEAKED ONTO THE SITE SOIL. THE INCINERATOR REPORTEDLY OPERATED UNTIL 1978.

DURING ITS OPERATING HISTORY, A VARIETY OF INDUSTRIAL WASTES WERE DISPOSED AT THE SUMMIT NATIONAL SITE. DRUMMED AND TANKED WASTES DISPOSED INCLUDED WASTE OILS, RESINS, PAINT SLUDGES, FLAMMABLE SOLVENTS, CHLORINATED SOLVENTS, PLATING SLUDGES, PESTICIDE WASTES, PHENOLS, CYANIDES, ACIDS, VARIOUS POLYMERS, AND LAB PACKS. MANY OF THE DRUMS AND BULK TANKS STORED ON THE SURFACE LEAKED QUANTITIES OF THESE MATERIALS INTO THE SURFACE OF THE SITE. IT WAS REPORTED THAT THE CONCRETE BLOCK PIT WAS USED FOR LIQUID WASTE MIXING AND SOLIDIFICATION AND OVERFLOWED ON A RECURRING BASIS DURING PERIODS OF HEAVY RAINFALL.

IN JUNE 1975 THE NORTHEAST DISTRICT OFFICE OF THE OHIO EPA INVESTIGATED A COMPLAINT OF AN UNAUTHORIZED DISCHARGE OF WASTE WATER FROM THE SITE. THE U.S. EPA CONDUCTED AN INVESTIGATION OF THE SITE ON OCTOBER 29, 1976 AND FOUND EVIDENCE OF NUMEROUS LEAKS AND SPILLS. THE OWNER WAS NOTIFIED OF THE NEED FOR A SPILL PREVENTION CONTROL AND COUNTERMEASURES PLAN (SPCC) AND INFORMED THAT HE WAS IN VIOLATION OF STATE LAWS RELATING TO TREATMENT AND DISPOSAL OF INDUSTRIAL WASTE. THE OHIO EPA DIRECTOR ISSUED FINAL FINDINGS AND ORDERS ON JUNE 12, 1978. THESE REQUIRED SUMMIT NATIONAL TO CEASE RECEIVING WASTE MATERIALS, REMOVE ALL

LIQUID WASTE FROM THE SITE, AND RECEIVE WRITTEN APPROVAL PRIOR TO REMOVING ANY MATERIAL FROM THE FACILITY. NO FURTHER WASTE MATERIAL WAS RECEIVED AFTER THIS DATE. ON MARCH 15, 1979, THE OWNER MR. GEORGE OFF SOLD THE SITE WITHOUT REMOVING ANY WASTES.

IN AUGUST 1979, THE STATE OF OHIO FILED A COMPLAINT AGAINST THE PRESENT AND FORMER OWNERS ALLEGING THE OPERATION OF A SOLID WASTE DISPOSAL SITE WITHOUT A PERMIT, CREATION OF A PUBLIC NUISANCE, FAILURE TO COMPLY WITH ORDERS FROM THE OHIO EPA, AND INSTALLATION OF FACILITIES FOR THE STORAGE AND DISPOSAL OF LIQUID WASTE WITHOUT SUBMITTING PLANS TO THE OHIO EPA. TESTING OF ONSITE WASTE MATERIALS ESTABLISHED THE PRESENCE OF OVER 7,500 GALLONS OF A TOXIC CHEMICAL, HEXACHLOROCYCLOPENTADIENE, COMMONLY CALLED HCCPD OR C-56. IN SEPTEMBER 1979, U.S. EPA NOTIFIED THE OWNER THAT, BECAUSE C-56 AND OTHER HAZARDOUS CHEMICALS WERE LEAKING TO THE ENVIRONMENT, REMEDIAL ACTION WAS BEING PLANNED PURSUANT TO SECTION 311 OF THE CLEAN WATER ACT. THE OWNER REFUSED TO TAKE VOLUNTARY ACTION OR FUND THE CLEANUP OPERATION, SO U.S. EPA FUNDED THE CLEANUP OF C-56 WASTES THAT TOOK PLACE BETWEEN SEPTEMBER AND NOVEMBER 1980. THE REMEDIAL ACTION CONSISTED IN DISPOSING OF THREE BULK TANKS AND THEIR CONTENTS (APPROXIMATELY 7,500 GALLONS), SOME CONTAMINATED SOIL, AND THE TREATMENT OF CONTAMINATED WATER.

IN NOVEMBER 1980, AN AGREEMENT WAS REACHED BETWEEN THE STATE AND EIGHT GENERATORS THAT PROVIDED \$2.5 MILLION FOR SURFACE CLEANUP. SURFACE CLEANUP OPERATIONS, INCLUDING REMOVAL OF DRUMS, TANKS AND VARIOUS SURFACE DEBRIS AND A SMALL AMOUNT OF CONTAMINATED SOIL, WERE CONCLUDED IN JUNE 1982. THE 1981-82 SURFACE CLEANUP PROJECT REMOVED MUCH OF THE SOURCE OF SITE CONTAMINATION, BUT DID NOT INCLUDE SUBSURFACE EXPLORATION OR CLEANUP.

IN OCTOBER 1981, THE ATTORNEY GENERAL OF THE STATE OF OHIO (OAG) FILED AN ACTION AGAINST THE POTENTIALLY RESPONSIBLE PARTIES (PRPS) UNDER FEDERAL LAW USING SECTION 107 OF CERCLA. THIS SUIT IS TO RECOVER PAST AND FUTURE COSTS OF REMOVAL AND REMEDIAL ACTIONS AT AND ABOUT THE SITE AND TO RECOVER COSTS FOR DAMAGES TO THE NATURAL RESOURCES OF AIR, SURFACE WATERS, GROUNDWATER AND SOILS IN AND AROUND THE SITE. THE STATUS OF THIS SUIT IS ON HOLD UNTIL THE U.S. EPA FINALIZES THE RI/FS DOCUMENT. HOWEVER, THE JUDGE IN THIS CASE DID HAVE THE FIRST REPORTED RULING THAT IT WAS CONGRESS'S INTENT THAT CERCLA 107 LIABILITIES ARE NOT ONLY FOR FUTURE LIABILITIES, BUT ALSO PAST LIABILITIES.

IN JUNE AND JULY OF 1982, THE U.S. EPA AND THE PRPS NEGOTIATED THE TERMS UNDER WHICH AN ADMINISTRATIVE ORDER BY CONSENT COULD BE SIGNED ALLOWING THE PRPS TO CONDUCT AND COMPLETE AN RI/FS AT THE SITE. THESE NEGOTIATIONS WERE TERMINATED DUE TO THE PRPS NOT ACCEPTING U.S. EPA'S BASIC CONDITIONS.

IN SEPTEMBER, 1983, THE SUMMIT NATIONAL SITE WAS PLACED ON THE NATIONAL PRIORITIES LIST (NPL) WHICH MADE IT ELIGIBLE FOR CLEAN-UP UNDER THE SUPERFUND PROGRAM. U.S. EPA ISSUED A WORK ASSIGNMENT TO CONDUCT A REMEDIAL INVESTIGATION (RI) AND FEASIBILITY STUDY (FS) FOR THE SUMMIT NATIONAL SITE. THE REMEDIAL INVESTIGATION WAS CONDUCTED IN TWO PHASES IN FALL 1984 AND WINTER 1986.

IN MARCH 1987, THE U.S. EPA ISSUED A SECTION 106 (A) CERCLA UNILATERAL ADMINISTRATIVE ORDER (AO) TO THE PRPS AT THE SITE. THIS AO WAS ISSUED TO CONTAIN AND TERMINATE THE ACTUAL OR THREATENED RELEASE INTO THE ENVIRONMENT OF HAZARDOUS SUBSTANCES DUE TO THE DETERIORATING SITE CONDITIONS. IT WAS OBSERVED IN DECEMBER, 1986 BY U.S. EPA THAT THE EASTERN POND ON THE SITE WAS FLOODING, THE EMBANKMENT ABOUT THE POND WAS ERODING AND AN UNDERGROUND TANK WAS LEAKING. IN MARCH 1987, THE SITE WENT CRITICAL DUE TO THE SPRING RAINS AND THAW. THE PRPS INFORMALLY AGREED TO REIMBURSE U.S. EPA FOR RESPONSE COSTS RELATED TO THIS EMERGENCY ACTION RATHER THAN IMPLEMENT THE AO. CURRENTLY, THE U.S. EPA AND THE PRPS ARE FINALIZING A SECTION 122(H) CERCLA, AS AMENDED, ADMINISTRATIVE ORDER BY CONSENT THAT WILL REIMBURSE U.S. EPA FOR THE COST OF COMPLETING THE REMOVAL ACTIONS SPECIFIED IN THE AO.

IN NOVEMBER 1987, THE U.S. EPA, STATE OF OHIO, DOJ, OAG AND PRPS STARTED THE LEGAL REMEDIAL DESIGN/REMEDIAL ACTION-CONSENT DECREE NEGOTIATIONS AT THIS SITE. THESE NEGOTIATIONS HAVE MADE PROGRESS AND ARE CURRENTLY ONGOING BETWEEN ALL PARTIES. AFTER THE RECORD OF DECISION IS FINALIZED TECHNICAL COMPONENTS OF THE CONSENT DECREE NEGOTIATIONS WILL COMMENCE UNDER THE SECTION 122(C) CERCLA, AS AMENDED, SPECIAL NOTICE LETTER PROVISIONS.

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COMMUNITY RELATIONS

COMMUNITY INVOLVEMENT AT THE SUMMIT NATIONAL SITE HAS BEEN MODERATE. RESIDENTS AND PRESS HAVE MAINTAINED AN INTEREST IN U.S. EPA ACTIVITIES AT THE SITE.

AN ADMINISTRATIVE RECORD HAS BEEN ESTABLISHED FOR THE SUMMIT NATIONAL SITE.

THIS RECORD CONTAINS INFORMATION REGARDING THE REMEDIAL INVESTIGATION, FEASIBILITY STUDY, EMERGENCY ACTIVITIES AND OTHER HISTORICAL AND ADMINISTRATIVE INFORMATION PERTINENT TO THE SITE. THE RECORD IS LOCATED AT THE U.S. POST OFFICE, 1365 ROUTE 14, IN DEERFIELD, OHIO. THE U.S. EPA ISSUED A PRESS RELEASE ANNOUNCING THE AVAILABILITY OF THE PROPOSED PLAN, FEASIBILITY STUDY, AND OTHER SITE-RELATED DOCUMENTS; LOCATION OF THE REPOSITORY; THE PUBLIC COMMENT PERIOD, FEBRUARY 12 TO MARCH 21, 1988; AND THE PUBLIC MEETING AT THE AMERICAN LEGION HALL IN DEERFIELD, OHIO, ON FEBRUARY 29, 1988. THE INDEX TO THE ADMINISTRATIVE RECORD IS IN ATTACHMENT 2.

THE PUBLIC MEETING WAS ATTENDED BY ABOUT 150 INTERESTED PARTIES, NEWS MEDIA, AND PUBLIC OFFICIALS. DURING THE MEETING THE U.S. EPA PRESENTED THE FEASIBILITY STUDY. THE PRESENTATION DESCRIBED THE DIFFERENT ALTERNATIVES CONSIDERED FOR THE SITE AND THE PREFERRED ALTERNATIVE. QUESTIONS WERE ANSWERED AND PUBLIC COMMENTS WERE INVITED AND ACCEPTED. THE RESPONSE TO WRITTEN COMMENTS RECEIVED DURING THE COMMENT PERIOD ARE PRESENTED IN THE RESPONSIVENESS SUMMARY, ATTACHMENT 1.

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SCOPE OF RESPONSE ACTION

THIS RECORD OF DECISION ADDRESSES ALL AFFECTED MEDIA AT THE SUMMIT NATIONAL SITE. THE SCOPE OF RESPONSE ACTION INCLUDES CONTAMINATED GROUNDWATER, SURFACE AND SUBSURFACE SOILS, SURFACE WATER, SEDIMENTS, BURIED DRUMS AND TANKS. THIS RECORD OF DECISION IS THE ONLY OPERABLE UNIT AND IS THE FINAL REMEDY FOR THE SUMMIT NATIONAL SITE.

SITE CHARACTERISTICS

RESULTS OF U.S. EPA'S REMEDIAL INVESTIGATION AT THE SITE INDICATE THAT SURFACE AND SUBSURFACE SOILS, SEDIMENTS, SURFACE WATER, AND GROUNDWATER BENEATH THE SITE ARE CONTAMINATED WITH A NUMBER OF ORGANIC AND INORGANIC COMPOUNDS. SAMPLES TAKEN OFF-SITE (SOUTH AND EASTERN PERIMETER) HAVE ALSO BEEN AFFECTED BY SITE CONTAMINATION. THE FOLLOWING SECTION PRESENTS THE MAJOR FINDINGS AND CONCLUSIONS OF THE MEDIA SAMPLED BASED ON THE RESULT FROM THE DATA OBTAINED. A SUMMARY OF THE MOST REPRESENTATIVE ORGANIC AND INORGANIC PARAMETERS FOR EACH MEDIA IS PRESENTED IN ATTACHMENT 3.

GROUNDWATER

THE HYDROGEOLOGY OF THE SUMMIT NATIONAL SITE IS COMPLEX. FOR PURPOSES OF DISCUSSION AND ANALYSIS, THE STRATA AT THE SITE HAS BEEN SEPARATED INTO THREE HYDROGEOLOGIC UNITS; THE WATER TABLE AQUIFER, THE "INTERMEDIATE" UNITS, AND THE UPPER SHARON "AQUIFER," AS SHOWN ON FIGURE 3.

GROUNDWATER IN THE WATER-TABLE AQUIFER FLOWS SOUTHWARD AND EASTWARD AND DOES NOT VARY MUCH ON A SEASONAL BASIS. THE WATER-TABLE AQUIFER IS GENERALLY 5 TO 12 FEET BELOW GRADE. THE INTERMEDIATE UNIT IS SEPARATED INTO TWO STRATAS BY AN UNNAMED LIMESTONE. THE UPPER PORTION FLOWS SOUTHEASTWARD AND THE LOWER PORTION FLOWS WESTWARD. GROUNDWATER IN THE UPPER SHARON FLOWS NORTHWARD.

VERTICAL GRADIENTS WITHIN BEDROCK VARY ACROSS THE STUDY AREA. THE GRADIENT BETWEEN THE WATER-TABLE AQUIFER AND ALL DEEPER STRATA IS DOWNWARD AT ALL LOCATIONS. IN BEDROCK, VERTICAL COMPONENTS ARE UPWARD AT THE SOUTHERN PORTION OF THE SITE AND DOWNWARD IN THE CENTRAL PORTION.

SHALLOW ONSITE GROUNDWATER IN THE WATER-TABLE AQUIFER AND UPPERMOST INTERMEDIATE UNITS IS CONTAMINATED WITH A NUMBER OF ORGANIC COMPOUNDS, INCLUDING 2-BUTANONE, PHENOL, TOLUENE, AND BIS (2-ETHYL HEXYL) PHTHALATE. THE HIGHEST CONCENTRATION OF THESE CONTAMINANTS OCCUR IN THE SOUTHWESTERN QUARTER OF THE SITE AND GENERALLY DECREASE ACROSS THE SOUTHERN HALF OF THE SITE, FROM WEST TO EAST.

OF THE DEEPER INTERMEDIATE WELLS, LEVELS OF CONTAMINANTS WERE DETECTED IN ONLY ONE WELL, MW-24. WELLS IN THE

UPPER SHARON AQUIFER DO NOT PRESENT CONTAMINATION PROBLEMS. NONE OF THE RESIDENTIAL WELLS, WHICH REPRESENT WATER IN THE INTERMEDIATE UNIT AND UPPER SHARON AQUIFER, INDICATED LEVELS OF ORGANIC CONTAMINANTS ABOVE BACKGROUND. BACKGROUND IS DEFINED AS THOSE PARAMETERS THAT OCCUR WITHIN THE NATURAL RANGE FOR THE AREA IN SOILS, GROUNDWATER, SEDIMENTS, SURFACE WATER, AND AIR. EACH MEDIA IS COMPARED TO BACKGROUND LEVELS PRESENT IN THE SAME MEDIA.

SOILS

THE BACKGROUND SOILS REPRESENTING LOCAL RESIDENTIAL, FARM AND STRIP MINE SOIL HAD DETECTABLE LEVELS OF NUMEROUS ORGANIC AND INORGANIC COMPOUNDS. THE ORIGINS OF THESE CONTAMINANTS WERE NOT ABLE TO BE DETERMINED FROM THE DATA OBTAINED DURING THE RI. HOWEVER, SOME INORGANIC COMPOUNDS SUCH AS ALUMINUM, ARSENIC, IRON, MANGANESE, AND NICKEL ARE ASSOCIATED WITH COAL AND COAL REFUSE, AND THEREFORE ARE NATURALLY OCCURRING IN A COAL MINING AREA.

THE ONSITE SURFACE AND SUBSURFACE SOILS (DOWN TO 8 FT.) WERE FOUND TO HAVE LEVELS OF NUMEROUS ORGANIC AND INORGANIC CONTAMINANTS. MANY OF THESE CONTAMINANTS WERE NOT OBSERVED OFF SITE, SUCH AS BENZENE, TOLUENE, AND PHENOL AND SOME WERE FOUND AT LEVELS UP TO SEVERAL ORDERS OF MAGNITUDE ABOVE BACKGROUND. SOIL LEVELS WERE COMPARED TO AN AVERAGE BACKGROUND WHICH INCLUDED RESIDENTIAL, FARMING AND MINING, AND WERE ALSO COMPARED TO RESIDENTIAL ALONE. BOTH COMPARISONS INDICATE THE SITE IS CONTAMINATED AND HAS AFFECTED OFFSITE SOILS. OFFSITE SOILS SOUTH OF THE SITE AT THE CEMENT PLANT ALSO CONTAINED NUMEROUS POLYNUCLEAR AROMATIC HYDROCARBONS (PAH'S) AND OTHER ORGANICS AT LEVELS ABOVE BACKGROUND. THE EASTERN OFFSITE SOILS ALSO SHOWED CONTAMINATION, PARTICULARLY PCBS, AT LEVELS THAT EXCEEDED BACKGROUND CONCENTRATIONS.

SURFACE WATER

SURFACE WATER FLOW AT AND NEAR THE SITE WAS OBSERVED TO OCCUR ONLY IN RESPONSE TO SEASONAL PRECIPITATION EVENTS. THEREFORE, NO RELIABLE FLOW ESTIMATES OR STREAM LOADING CHARACTERISTICS COULD BE MADE. THE ONSITE SURFACE WATER WAS FOUND TO BE CONTAMINATED WITH ORGANIC AND INORGANIC COMPOUNDS AT CONCENTRATIONS ABOVE BACKGROUND. THE EAST POND HAD CONSISTENTLY HIGHER LEVELS OF CONTAMINANTS THAN THE WEST POND, BASED ON TOTAL FRACTION CONCENTRATION.

OFFSITE SURFACE WATER IS ALSO CONTAMINATED WITH ORGANICS AND METALS AT CONCENTRATIONS ABOVE BACKGROUND. THE MAJOR AREAS OF CONTAMINATION ARE THE SOUTH DITCH (DOWNSTREAM) AND THE LOWER EAST DRAINAGE DITCH (FIGURE 2).

SEDIMENT

ONSITE SEDIMENTS WERE FOUND TO BE CONTAMINATED IN ALL FRACTIONS ANALYZED BASED ON CONCENTRATIONS THAT EXCEEDED BACKGROUND SOIL CONCENTRATIONS AND UPSTREAM SEDIMENT CONCENTRATIONS (NOT AFFECTED BY THE SITE). THE WEST POND SAMPLES DETECTED HIGHER CONCENTRATIONS OF CONTAMINANTS IN THE ORGANIC FRACTIONS, WHILE THE EAST POND SAMPLES SHOWED HIGHER LEVELS OF INORGANICS. THE OFFSITE SEDIMENT IN THE SOUTHERN DITCH (UPSTREAM AND DOWNSTREAM) AND LOWER EAST DRAINAGE DITCH WERE FOUND TO HAVE ORGANICS THAT EXCEEDED BACKGROUND. THE FIRST AND SECOND IMPOUNDMENTS LOCATED OFFSITE TO THE SOUTHEAST ALSO SHOWED MINOR CONTAMINATION.

AIR QUALITY

THE RESULTS OF THE RI INDICATED THAT THE SITE EMITS LOW LEVELS OF VOCs TO THE AIR. HOWEVER, THE LEVELS WERE FAR BELOW FEDERAL HEALTH AND SAFETY STANDARDS. U.S. EPA CONCLUDED THAT AIR CONTAMINATION SHOULD NOT OCCUR UNLESS THERE IS A SURFACE DISTURBANCE AT THE SITE.

BURIED MATERIAL

RESULT OF THE BURIED MATERIALS INVESTIGATION AT THE SITE INDICATE THAT FIVE BURIED TANKS AND AN ESTIMATED 900 TO 1,600 DRUMS ARE BURIED ON SITE. ESTIMATES INDICATE THAT THE TOTAL NUMBER OF DRUMS EXISTING INTACT THAT MAY CONTAIN WASTE CAN BE 675 TO 1,200. OUT OF FIVE TANKS, U.S. EPA REMOVED ONE TANK IN SPRING 1987. THE TANK CONTAINED SEVERAL ORGANIC AND INORGANIC COMPOUNDS.

SUMMARY OF RISKS

AS PART OF THE RI PROCESS, A RISK ASSESSMENT WAS CONDUCTED TO DETERMINE THE POTENTIAL RISK THE SITE MAY HAVE ON HUMAN HEALTH. THE STUDY CONCLUDED THAT UNACCEPTABLE HEALTH RISKS (GREATER THAN 10^{-6} EXCESS LIFE TIME CANCER RISK) MAY OCCUR UNDER A NUMBER OF EXPOSURES. THE POTENTIAL PATHWAYS OF EXPOSURE ARE INCIDENTAL INGESTION AND DIRECT CONTACT OF SOIL, AND CONSUMPTION OF CONTAMINATED GROUNDWATER IN THE SHALLOW AND INTERMEDIATE WATER BEARING UNITS BENEATH THE SITE.

UNDER CURRENT CONDITIONS EXPOSURE OF ON-SITE TRESPASSERS, OFFSITE WORKERS, AND RESIDENTS, TO SOILS HAVE AN AVERAGE RISK WHICH RANGE BETWEEN 1×10^{-8} TO 3×10^{-6} . FOR THE SAME EXPOSURE SCENARIOS BUT UNDER A PLAUSIBLE MAXIMUM CASE, THE RISKS RANGE BETWEEN 2×10^{-4} TO 4×10^{-5} . THE MAXIMUM EXPOSURE SCENARIO REPRESENTS A POTENTIAL FOR MODERATE EXPOSURE. THE NONCARCINOGENIC INDEX IS LESS THAN 1 FOR BOTH SCENARIOS AND THEREFORE, NONCARCINOGENIC HEALTH EFFECTS ARE NOT LIKELY TO OCCUR.

EXPOSURE TO SEDIMENTS UNDER CURRENT CONDITION INCLUDED OFFSITE DITCHES AND THE SECOND IMPOUNDMENT. THE RISK RANGE FOR THE AVERAGE CASE IS 2×10^{-7} TO 6×10^{-2} AND FOR THE MAXIMUM CASE IS 6×10^{-6} TO 1×10^{-7} . CARCINOGENIC HEALTH EFFECTS ARE NOT LIKELY TO OCCUR UNDER THESE SCENARIOS WITH THE EXCEPTION OF EXPOSURE TO DITCHES UNDER THE MAXIMUM CASE. NONCARCINOGENIC HEALTH EFFECTS ARE NOT LIKELY TO OCCUR SINCE THE HAZARD INDEX IS LESS THAN ONE.

UNDER FUTURE CONDITIONS, ONSITE WORKERS AND RESIDENTS HAVE A RANGE OF 1×10^{-5} TO 2×10^{-7} UNDER AN AVERAGE EXPOSURE SCENARIO, AND 5×10^{-5} TO 2×10^{-4} UNDER THE MAXIMUM EXPOSURE SCENARIO. THE NONCARCINOGENIC HAZARD INDEX EXCEEDS ONE UNDER THE ONSITE RESIDENTS PLAUSIBLE MAXIMUM EXPOSURE SCENARIO. THESE RESULTS REPRESENT A SIGNIFICANT POTENTIAL FOR CARCINOGENIC AND NONCARCINOGENIC HEALTH EFFECTS.

EXPOSURE TO GROUNDWATER FOR ONSITE RESIDENTS AND WORKERS FOR FUTURE CONDITIONS RANGE BETWEEN 1×10^{-3} TO 4×10^{-9} UNDER THE AVERAGE CASE, AND 3×10^{-1} TO 1×10^{-3} UNDER THE MAXIMUM EXPOSURE CASE. THE NONCARCINOGENIC HAZARD INDEX FOR THE WATER TABLE EXCEEDS ONE FOR BOTH THE AVERAGE AND MAXIMUM CASES. THE HIGHEST RISKS ARE ASSOCIATED WITH THE WATER TABLE AQUIFER, WHICH REPRESENT A SIGNIFICANT POTENTIAL FOR BOTH CARCINOGENIC AND NONCARCINOGENIC HEALTH EFFECTS.

A SUMMARY OF POTENTIAL RISKS ASSOCIATED WITH THE SUMMIT NATIONAL SITE IS PRESENTED IN TABLE 1.

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DESCRIPTION OF ALTERNATIVES

THE FOLLOWING ASSEMBLED REMEDIAL ALTERNATIVES REPRESENT A RANGE OF REMEDIATION APPLICABLE TO THE SUMMIT NATIONAL SITE. A COST SUMMARY IS PRESENTED IN TABLE 2. THE DETAILED COST ANALYSIS FOR EACH ALTERNATIVE IS PRESENTED IN ATTACHMENT 4.

ALTERNATIVE 1 - NO ACTION

THE SUPERFUND PROGRAM MUST EVALUATE THE NO ACTION ALTERNATIVE TO ESTABLISH A BASELINE FOR COMPARISON. HOWEVER, AT THE SUMMIT NATIONAL SITE THIS ALTERNATIVE IS NOT PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT AS DEMONSTRATED BY THE CONCLUSION OF THE PUBLIC HEALTH EVALUATION. THEREFORE, THE NO ACTION ALTERNATIVE IS NOT EFFECTIVE AND ELIMINATED FROM FURTHER CONSIDERATION FOR THIS SITE.

ALTERNATIVE 2 - RESIDENT RELOCATION WITH MONITORING

THIS ALTERNATIVE INCLUDES ACCESS AND DEED RESTRICTIONS, RELOCATION OF THE WATSON RESIDENCE LOCATED ON THE EASTERN PERIMETER, RUNOFF AND GROUNDWATER MONITORING. THIS ALTERNATIVE CAN BE IMPLEMENTED WITHIN ONE YEAR AT A PRESENT WORTH COST OF \$820,000.

ALTERNATIVE 3 - CAPPING AND OFFSITE DRUM INCINERATION

THE MAJOR COMPONENTS OF THIS ALTERNATIVE ARE: EXCAVATION AND OFF-SITE INCINERATION OF THE CONTENTS OF BURIED DRUMS AND TANKS; CONSTRUCTION OF A RCRA CAP OVER THE SITE TO REDUCE CONTACT WITH CONTAMINATED MATERIALS; CONSTRUCTION OF A SOIL-BENTONITE SLURRY WALL TO LIMIT MIGRATION OF CONTAMINATED GROUND WATER; LOWERING OF THE WATER TABLE AQUIFER BY THE USE OF 220 WELL POINTS; EXTRACTION OF CONTAMINATED GROUNDWATER FROM THE UPPER

INTERMEDIATE UNIT BY 12 WELL POINTS; AND ACCESS RESTRICTIONS, MONITORING, AND RESIDENT RELOCATION AS DESCRIBED IN ALTERNATIVE 2. THIS ALTERNATIVE CAN BE IMPLEMENTED WITHIN ONE YEAR AT A PRESENT WORTH COST OF \$15,000,000.

GROUNDWATER EXTRACTION AND TREATMENT WILL BE THE SAME IN SUBSEQUENT ALTERNATIVES.

ALTERNATIVE 4 - ONSITE RCRA LANDFILL FOR VADOSE SOIL

THIS ALTERNATIVE CONSISTS PRIMARILY OF THE SAME COMPONENTS, INCLUDING OFFSITE INCINERATION OF THE CONTENTS OF BURIED DRUMS AND TANKS, AS CONTAINED IN ALTERNATIVE 3, EXCEPT THAT CONTAMINATED ONSITE SOIL WITHIN THE VADOSE ZONE WILL BE EXCAVATED AND PLACED INTO A RCRA LANDFILL CONSTRUCTED ON SITE. AS WITH ALTERNATIVE 3, SITE FENCING, DEED RESTRICTIONS AND MONITORING WILL BE NECESSARY SINCE CONTAMINANTS REMAIN ON SITE. THIS ALTERNATIVE CAN BE IMPLEMENTED WITHIN A TWO TO THREE YEAR TIME PERIOD AT A COST OF \$22,000,000.

ALTERNATIVE 5 - THERMAL TREATMENT OF "HOT SPOT" SOIL

THIS ALTERNATIVE CONSISTS OF SIMILAR COMPONENTS AS ALTERNATIVE 3, WITH THE ADDITIONAL EXCAVATION AND ONSITE THERMAL TREATMENT OF APPROXIMATELY 32,000 CU. YDS. OF HIGHLY CONTAMINATED SOIL. THIS ALTERNATIVE HAD INITIALLY INCLUDED THE EXCAVATION AND TREATMENT OF ONLY 27,000 C.Y. HOWEVER, AFTER FURTHER REVIEW, IT WAS DETERMINED THAT AN ADDITIONAL 5,000 C.Y. WOULD HAVE TO BE REMOVED AND TREATED. THE RATIONALE FOR THE ADDITIONAL SOIL VOLUME IS BASED ON SURFACE SOIL BLOCKS EXCEEDING THE 1×10^{-5} UPPERBOUND CANCER RISK AS DEPICTED IN FIGURE 4. THE DRUM AND TANK CONTENTS WOULD BE TREATED ON SITE IN THE MOBILE INCINERATION UNIT. ONE INCINERATION UNIT WOULD BE EMPLOYED AT THE SITE AND THE DURATION OF TREATMENT WOULD BE APPROXIMATELY 5 YEARS. TREATMENT RESIDUE FROM THE ONSITE INCINERATOR WOULD BE REPLACED IN AN ONSITE RCRA LANDFILL. THE TIME FRAME FOR THIS ALTERNATIVE IS FIVE YEARS AND HAS A PRESENT WORTH COST OF \$25,000,000.

ALTERNATIVE 6 - THERMAL TREATMENT OF VADOSE SOIL

THIS ALTERNATIVE INCLUDES COMPONENTS SIMILAR TO ALTERNATIVE 5, EXCEPT THAT INSTEAD OF TREATING ONLY "HOT SPOT" SOIL, ALL VADOSE SOIL DETERMINED TO BE CONTAMINATED, BASED ON RI SOIL BORING DATA, WOULD BE EXCAVATED AND INCINERATED. A TOTAL OF APPROXIMATELY 105,000 CU. YDS. OF SOIL WOULD BE EXCAVATED, INCINERATED ONSITE, AND BACKFILLED IN THE SAME MANNER AS DESCRIBED IN ALTERNATIVE 5. TWO INCINERATION WOULD BE EMPLOYED ONSITE AND THE DURATION OF TREATMENT WOULD BE APPROXIMATELY NINE YEARS. THE PRESENT WORTH COST IS \$46,000,000 FOR ALTERNATIVE 6.

ALTERNATIVE 7 - THERMAL TREATMENT OF ALL UNCONSOLIDATED MATERIAL TO BEDROCK

IN THIS ALTERNATIVE, ALL CONTAMINATED, UNCONSOLIDATED MATERIALS, INCLUDING BURIED TANKS AND DRUMS, ALL CONTAMINATED VADOSE SOIL, AND ALL SATURATED UNCONSOLIDATED MATERIALS ASSOCIATED WITH THE CONTAMINATED PORTION OF THE WATER TABLE AQUIFER WOULD BE EXCAVATED AND TREATED ON SITE.

CONTAMINATED SOIL AND OTHER UNCONSOLIDATED MATERIALS AMOUNTING TO APPROXIMATELY 430,000 CU. YDS., WOULD BE TREATED ON SITE USING THE THERMAL TREATMENT SYSTEM DESCRIBED IN ALTERNATIVE 5. TREATMENT OF THIS MATERIAL WOULD REQUIRE AN ESTIMATED 12 YEARS. THE PRESENT WORTH COST IS \$127,000,000.

ALTERNATIVE 8 - IN SITU VITRIFICATION OF "HOT SPOT" SOILS

THIS ALTERNATIVE PARALLELS ALTERNATIVE 5 WITH THE MAJOR DIFFERENCE BEING THAT IN SITU VITRIFICATION OF "HOT SPOT" SOILS ARE USED AS THE SOIL TREATMENT METHOD, RATHER THAN ONSITE INCINERATION. THE ONSITE RCRA LANDFILL WOULD ALSO BE ELIMINATED AS THE SOILS ARE VITRIFIED IN PLACE. BURIED DRUM AND TANK CONTENTS WOULD BE TRANSPORTED OFF SITE FOR THERMAL TREATMENT. THIS ALTERNATIVE ONCE IN PLACE CAN BE COMPLETED WITHIN A TWO YEAR TIME FRAME. THE PRESENT WORTH COST IS \$29,000,000.

ALTERNATIVE 9 - IN SITU VITRIFICATION OF VADOSE SOILS

THIS ALTERNATIVE PARALLELS ALTERNATIVE 6 WITH THE MAJOR DIFFERENCE BEING THAT IN SITU VITRIFICATION OF THE VADOSE SOILS IS USED AS THE SOIL TREATMENT METHOD, RATHER THAN ONSITE INCINERATION. THE ONSITE RCRA LANDFILL

WOULD ALSO BE ELIMINATED AS THE SOILS ARE VITRIFIED IN PLACE. BURIED DRUM AND TANK CONTENTS WOULD BE TRANSPORTED OFF SITE FOR THERMAL TREATMENT. RATHER THAN A MULTI-LAYER CAP, THE SITE WILL BE COVERED WITH A SIMPLE SOIL COVER AT THE COMPLETION OF VITRIFICATION. IMPLEMENTATION CAN BE ACHIEVED WITHIN SEVEN YEARS AT A PRESENT WORTH COST OF \$39,000,000.

GROUNDWATER RESPONSE

THE PUMP AND TREATMENT SYSTEM IS INCORPORATED IN ALTERNATIVES 3 THROUGH 9. THE VERTICAL BARRIER AND PUMPING OF THE CONTAMINATED GROUNDWATER IN BOTH THE SHALLOW WATER TABLE AND INTERMEDIATE UNIT WOULD LEAD TO RESTORATION OF THE AQUIFER. PUMPING IN THE INTERMEDIATE UNIT IS APPROXIMATELY 2 TO 10 YEARS TO FULLY DEWATER THE ONSITE WATER TABLE AQUIFER. HOWEVER, PUMPING WILL BE PERPETUAL FOR GRADIENT CONTROL PURPOSES. CLEANUP OF THE INTERMEDIATE AQUIFER COULD OCCUR WITHIN 5 TO 10 YEARS. THESE CALCULATIONS ARE BASED ON DATA COLLECTED DURING THE RI WHICH INDICATED A RANGE OF HYDRAULIC CONDUCTIVITIES VALUES. THE EXTRACTION SYSTEM CONSISTS IN THE INSTALLATION OF 220 WELLS OVER THE SITE ON A 50 FT. GRID SYSTEM.

THE TREATMENT PROCESS WILL MEET WATER QUALITY STANDARDS AND EFFECTIVELY PROTECT HUMAN HEALTH AND THE ENVIRONMENT. IN ABSENCE OF STANDARDS, DISCHARGE LEVELS WILL OBTAIN THE BEST AVAILABLE TECHNOLOGY ECONOMICALLY ACHIEVABLE CRITERIA. TREATED WATER WILL BE DISCHARGED TO A SURFACE WATER POINT LOCATED APPROXIMATELY 3500 FEET DOWNGRAIENT OF THE SITE. THE TREATMENT SYSTEM WILL INCLUDE PRECIPITATION, FLOCCULATION, COAGULATION, OIL AND WATER SEPARATION, FILTRATION, AND CARBON ABSORPTION. IT IS UNLIKELY THAT ANY VIOLATIONS OF AIR EMISSIONS OF VOLATILE COMPOUNDS WILL OCCUR. HOWEVER, MONITORING CONTROLS WILL BE TAKEN TO ASSURE COMPLIANCE WITH AIR QUALITY STANDARDS.

#CAA

COMPARATIVE ANALYSIS OF ALTERNATIVES

THE MAJOR OBJECTIVE OF THE FS FOR THE SUMMIT NATIONAL SITE IS TO EVALUATE REMEDIAL ALTERNATIVES, THAT ARE DESIGNED TO REMEDIATE SITE CONTAMINATION AND ASSOCIATED PROBLEMS. THE EVALUATION CRITERIA IS CONSISTENT WITH THE GOALS AND OBJECTIVES OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (CERCLA) AS AMENDED BY SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986. THE REMEDIAL ALTERNATIVE MUST EFFECTIVELY MITIGATE AND MINIMIZE THREATS TO HUMAN HEALTH, WELFARE AND ENVIRONMENT, BE IMPLEMENTABLE, AND COST EFFECTIVE.

THE NATURE AND EXTENT OF SITE HAZARDS SUMMARIZED IN THE SUMMIT RI, FORM THE BASIS FOR IDENTIFYING SPECIFIC OBJECTIVES FOR REMEDIATING CONTAMINATED SOIL AND SUBSURFACE WASTES (BURIED DRUMS AND TANKS), SEDIMENT, SURFACE WATER, AND GROUNDWATER AND ASSOCIATED FREE PRODUCT. THE RISKS IDENTIFIED AT THE SITE IN THE PUBLIC HEALTH RISK ASSESSMENT ESTABLISH THE BASIS FOR IDENTIFYING SITE-SPECIFIC GOALS OF REMEDIAL MEASURES.

THE ALTERNATIVES WERE SCREENED BASED ON THEIR ABILITY TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT; ACHIEVE STATE AND FEDERAL ARARS (APPLICABLE OR RELEVANT, AND APPROPRIATE REQUIREMENTS); REDUCTION IN TOXICITY, MOBILITY, AND VOLUME; LONG AND SHORT-TERM EFFECTIVENESS; IMPLEMENTABILITY; COST EFFECTIVENESS; STATE AND COMMUNITY ACCEPTANCE. BASED ON SCREENING AND DETAILED ANALYSIS OF REMEDIAL ALTERNATIVES FOR THE SUMMIT NATIONAL SITE, SEVERAL ASSEMBLED REMEDIAL ALTERNATIVES, INCLUDING THE NO ACTION ALTERNATIVE, WERE DEVELOPED.

A SUMMARY OF THE DETAILED ANALYSIS OF ALTERNATIVES IS PRESENTED IN FIGURE 5. THE PURPOSE OF THE FOLLOWING SECTION IS TO SUMMARIZE THE RELATIVE PERFORMANCE OF THE ALTERNATIVES EVALUATION WITH RESPECT TO THE CRITERIA.

#OPHHE

OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

THE NO ACTION ALTERNATIVE AND RELOCATION/MONITORING ALTERNATIVES (1 AND 2 RESPECTIVELY), DO NOT PROVIDE ADEQUATE PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT. THE RELOCATION OF THE WATSON RESIDENT REMOVES THE RISK ASSOCIATED WITH EXPOSURE TO OFFSITE SOILS, BUT DOES NOT SATISFY THE OVERALL PROTECTION CRITERIA. SINCE THESE TWO ALTERNATIVES DO NOT SATISFY THE PROTECTIVENESS CRITERIA, THEY ARE ELIMINATED FROM FURTHER CONSIDERATION.

THE REMAINING ALTERNATIVES PROVIDE ADEQUATE PROTECTION, ALTHOUGH THEY DO SO THROUGH DIFFERENT COMBINATIONS OF

TREATMENT, ENGINEERING, AND INSTITUTIONAL CONTROLS. ALL ALTERNATIVES ELIMINATE THE EXPOSURE ROUTES TO ANY RESIDUAL CONTAMINATION WHICH WOULD RESULT IN ELIMINATING ANY RESIDUAL RISKS ASSOCIATED WITH THE SITE.

#CAAR

COMPLIANCE WITH APPLICABLE AND APPROPRIATE REQUIREMENTS

ALL PROTECTIVE ALTERNATIVES ARE DESIGNED TO ATTAIN THE APPLICABLE AND APPROPRIATE REQUIREMENTS OF FEDERAL AND STATE ENVIRONMENTAL LAWS.

LONG - TERM EFFECTIVENESS AND PERMANENCE

ALTERNATIVE 7, THERMAL TREATMENT OF ALL CONTAMINATED MATERIAL DOWN TO BEDROCK, OFFERS THE HIGHEST DEGREE OF LONG-TERM EFFECTIVENESS AND PERMANENCE SINCE IT WILL DESTROY VIRTUALLY ALL ORGANIC CONTAMINATION PRESENT AT THE SITE. THIS ALTERNATIVE IS VERY COMPREHENSIVE IN ITS SCOPE AND IS EXTREMELY DIFFICULT TO IMPLEMENT.

ALTERNATIVES 6 AND 9 AFFORD A HIGH DEGREE OF LONG-TERM EFFECTIVENESS AND PERMANENCE BY TREATING AND IMMOBILIZING ALL CURRENTLY KNOWN SOURCES OF CONTAMINATION. WHILE INCINERATION WOULD DESTROY THE ORGANIC FRACTION, THE CONTAINMENT OF THE INORGANIC FRACTION WOULD BE ACHIEVED BY THE INSTALLATION OF THE DOUBLE SYNTHETIC LINER. THE VITRIFICATION ALTERNATIVE, WOULD ENCAPSULATE THE CONTAMINATION PROVIDING EFFECTIVE IMMOBILIZATION OF BOTH ORGANIC AND INORGANIC COMPOUNDS. ALTERNATIVE 6 IS AS EFFECTIVE AS ALTERNATIVE 9, BUT DUE TO THE LINER, ALTERNATIVE 6 MAY HAVE MORE INTENSIVE LONG-TERM MANAGEMENT.

ALTERNATIVES 5 AND 8 ARE EQUALLY EFFECTIVE BUT ARE LESS LONG-TERM EFFECTIVE AND PERMANENT THAN ALTERNATIVES 6, 7, AND 9. ALTERNATIVES 5 AND 8 INVOLVE TREATMENT OF A LESSER AMOUNT OF CONTAMINATED SOIL, RESULTING IN A GREATER AMOUNT OF RESIDUAL CONTAMINATION. THE REMAINING UNTREATED SOIL WOULD BE PROPERLY CONTAINED BY THE MULTI-LAYER CAP AND ANY LEACHABILITY OF THE SOIL WOULD BE COLLECTED BY THE LEACHATE COLLECTION SYSTEM. LEACHATE PRODUCTION WILL BE MINIMAL SINCE THE WATER TABLE WILL BE MAINTAINED AT A LEVEL BELOW THE RESIDUAL CONTAMINATED SOIL. THIS ALTERNATIVE MAY REQUIRE LONGER-TERM MANAGEMENT THAN ALTERNATIVE 8.

ALTERNATIVES 3 AND 4 ARE IDENTICAL IN THE AMOUNT OF MATERIAL THEY LEAVE BEHIND TO BE MANAGED OVER TIME. ALTERNATIVE 3 PROVIDES A MULTI-LAYER CAP WHICH ELIMINATES DIRECT CONTACT. ALTERNATIVE 4 WOULD, HOWEVER, AFFORDS A SLIGHTLY HIGHER DEGREE OF LONG TERM EFFECTIVENESS IN THAT RESIDUALS WOULD BE DISPOSED OF IN AN ONSITE RCRA LANDFILL. THE LANDFILL WOULD INCLUDE A DOUBLE SYNTHETIC LINER WHICH WOULD PREVENT LEACHING INTO GROUNDWATER.

REDUCTION OF TOXICITY, MOBILITY, OR VOLUME

ALTERNATIVES 5, 6, 7, 8, AND 9 WOULD ALL SATISFY THE STATUTORY PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT. THE REMEDY WOULD ADDRESS THE PRINCIPAL THREATS AT THE SITE UNDER EACH OPTION.

ALTERNATIVE 7, WOULD INVOLVE THERMAL TREATMENT OF ALL UNCONSOLIDATED MATERIAL AND IS EXPECTED TO DESTROY 100% OF ALL CONTAMINATED MATERIAL, THEREFORE AFFORDING THE HIGHEST DEGREE OF REDUCTION IN TOXICITY, MOBILITY, AND VOLUME.

THERMAL TREATMENT WILL ACHIEVE A DESTRUCTION AND REMOVAL EFFICIENCY (DRE) OF 99.99% FOR EACH INDIVIDUAL PRINCIPAL ORGANIC HAZARDOUS CONSTITUENT (POHC). WHEN DIOXINS OR PCBS ARE PRESENT, THE DRE IS 99.9999% FOR EACH POHC. THE DEGREE OF OVERALL REDUCTION IN TMV CORRELATES TO THE VOLUME OF MATERIAL THAT WILL BE TREATED, WHICH IS GREATEST UNDER ALTERNATIVE 7, AND LEAST UNDER ALTERNATIVE 5.

ALTERNATIVES 8 AND 9 INVOLVE IN-SITU VITRIFICATION WHICH ENCAPSULATES CONTAMINANTS THUS IMMOBILIZING AND PREVENTING EXPOSURE TO THEIR TOXICITY. THE OVERALL REDUCTION IN TMV IS GREATER IN ALTERNATIVE 9 THAN UNDER ALTERNATIVE 8.

ALTERNATIVES 3 AND 4 INVOLVE TREATMENT OF DRUM AND TANK CONTENTS, WHICH ARE EQUAL IN REDUCTION OF TMV. HOWEVER, NEITHER ALTERNATIVE ADDRESSES THE HIGHLY CONTAMINATED SOILS SO THAT THE PRINCIPAL THREATS ARE NOT

FULLY ADDRESSED BY TREATMENT.

SHORT - TERM EFFECTIVENESS

ALTERNATIVES 2 AND 3 ARE MOST EFFECTIVE IN THE SHORT-TERM IN THAT THEY CAN ACHIEVE THEIR RESPECTIVE RESPONSE OBJECTIVES IN LESS THAN ONE YEAR WITH NO POTENTIAL ADVERSE IMPACTS RESULTING FROM IMPLEMENTATION ACTIVITIES.

ALTERNATIVE 8, IN-SITU VITRIFICATION OF HOT SPOT SOILS COULD BE IMPLEMENTED WITHIN A TWO YEAR TIME FRAME, WHICH IS COMPARABLE TO ALTERNATIVE 4 CONSTRUCTION OF A RCRA LANDFILL. THERE ARE NO ANTICIPATED POTENTIAL ADVERSE EFFECTS ASSOCIATED WITH IMPLEMENTATION OF VITRIFICATION. ALTERNATIVE 4 REQUIRES THE EXCAVATION AND HANDLING OF CONTAMINATED SOILS WHICH IS TECHNICALLY MORE COMPREHENSIVE AND COULD RESULT IN SHORT-TERM ADVERSE EFFECTS.

IMPLEMENTATION OF ALTERNATIVE 5, THERMAL TREATMENT OF "HOT SPOT" SOILS IS ESTIMATED AT FIVE YEARS. THIS ALTERNATIVE COULD POSE POTENTIAL SHORT-TERM EFFECTS DUE TO EXCAVATION, MATERIALS HANDLING, AND POSSIBLE AIR EMISSIONS.

ALTERNATIVE 9, IN-SITU VITRIFICATION OF CONTAMINATED VADOSE SOILS WOULD REQUIRE A SEVEN YEAR IMPLEMENTATION TIME FRAME BUT IS NOT EXPECTED TO RESULT IN ADVERSE IMPACTS ON WORKERS, THE COMMUNITY, OR THE ENVIRONMENT.

ALTERNATIVE 6, THERMAL TREATMENT OF VADOSE SOILS IS ESTIMATED AT NINE YEARS WHICH COULD POSE POTENTIAL SHORT-TERM EFFECTS. ALTERNATIVE 7, THERMAL TREATMENT OF ALL UNCONSOLIDATED MATERIALS, IS THE LEAST EFFECTIVE OF ALL ALTERNATIVES IN THE SHORT-TERM DUE TO THE 12 YEAR TIME FRAME. THIS ALTERNATIVE HAS THE HIGHEST POTENTIAL FOR ADVERSE IMPACTS ON WORKERS, THE COMMUNITY, AND THE ENVIRONMENT.

#IMP

IMPLEMENTABILITY

ALTERNATIVES 5 THROUGH 9 INVOLVE ONSITE REMEDIAL TECHNOLOGIES WHICH DO NOT RESULT IN OFF-SITE COMPLICATIONS. ALTERNATIVES 6 AND 7, INVOLVE THERMAL TREATMENT OF APPROXIMATELY 32,000, 105,000, AND C.Y. RESPECTIVELY. THE IMPLEMENTABILITY CONSIDERATIONS ASSOCIATED THE HANDLING AND TREATMENT OF CONTAMINATED SOILS, CONSTRUCTION OF AN ONSITE RCRA LANDFILL, AND THE PUMPING OF THE GROUNDWATER, PRESENTS LEAST IMPLEMENTABILITY PROBLEMS IN ALTERNATIVE 5 AND THE MOST DIFFICULT IN ALTERNATIVE 7.

IN-SITU VITRIFICATION IS A LESS PROVEN TECHNOLOGY THAN THERMAL TREATMENT. IMPLEMENTABILITY CONSIDERATIONS WITH THIS TECHNOLOGY FOR ALTERNATIVES 8 AND 9, INCLUDE THE AVAILABILITY OF VITRIFICATION UNITS, AND THE UNCERTAINTY OVER THE TECHNICAL FEASIBILITY IN THE SPECIFIC WASTE MATRIX.

ALTERNATIVES 3 AND 4 INVOLVE OFF-SITE THERMAL TREATMENT OF DRUMS AND TANKS. THE TRANSPORTATION AND OFF-SITE DISPOSAL OF HAZARDOUS MATERIALS MAY PRESENT DIFFICULTIES WITH THE AVAILABILITY OF TRANSPORTATION SERVICES, AND CAPACITY OF A RCRA FACILITY. ALTERNATIVE 4 IS MORE DIFFICULT TO IMPLEMENT THAN ALTERNATIVE 3 SINCE IT INVOLVES THE ADDITIONAL HANDLING OF SOILS AND CONSTRUCTION OF AN ONSITE RCRA LANDFILL.

COST

ALTERNATIVE 7, THERMAL TREATMENT OF ALL UNCONSOLIDATED MATERIALS, IS BY FAR THE MOST COSTLY ALTERNATIVE WITH A PRESENT WORTH COST ESTIMATED AT \$127,000,000. THIS COMPARES TO \$46,000,000 FOR ALTERNATIVE 6, THERMAL TREATMENT OF THE CONTAMINATED VADOSE SOILS, AND \$39,000,000 FOR ALTERNATIVE 9, IN-SITU VITRIFICATION OF CONTAMINATED VADOSE SOILS.

ALTERNATIVE 4, RCRA LANDFILL OF VADOSE SOIL; ALTERNATIVE 5 THERMAL TREATMENT OF "HOT SPOT" SOILS; AND ALTERNATIVE 8, IN-SITU VITRIFICATION OF "HOT SPOT" SOILS OFFER MORE COMPARABLE COSTS AT \$22,000,000, \$25,000,000, \$29,000,000 RESPECTIVELY. CAPPING WITH OFF-SITE INCINERATION OF DRUMS AND TANKS UNDER ALTERNATIVE 3 WOULD COST \$15,000,000.

#SA

STATE ACCEPTANCE

THE STATE OF OHIO HAS BEEN CONSULTED THROUGHOUT THE REMEDIAL INVESTIGATION AND FEASIBILITY STUDY PROCESS. BASED ON DISCUSSIONS WITH BY THE OHIO ENVIRONMENTAL PROTECTION AGENCY PLAN ON THE RI/FS AND PROPOSED PLAN, THE STATE CONCURS WITH THE SELECTED REMEDIAL ALTERNATIVE AT THE SUMMIT NATIONAL SITE.

#CA

COMMUNITY ACCEPTANCE

THE LOCAL COMMUNITY, IN GENERAL, SUPPORTS U.S. EPA'S PREFERRED ALTERNATIVE BASED ON THE COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD. CITIZENS WERE CONCERNED WITH THE QUALITY OF THEIR DRINKING WATER AND WOULD LIKE A RESIDENTIAL MONITORING PROGRAM TO BE IMPLEMENTED BY THE U.S. EPA. SOME CONCERN WERE RAISED REGARDING AIR EMISSIONS FROM THE INCINERATOR. THESE CONCERNS ARE ADEQUATELY ADDRESSED IN THE FEASIBILITY STUDY AND WILL BE ADDRESSED IN THE RESPONSIVENESS SUMMARY.

#SR

SELECTED REMEDY

BASED ON THE EVALUATION OF EFFECTIVENESS, IMPLEMENTABILITY, PROTECTIVENESS, REDUCTION OF TOXICITY MOBILITY, AND VOLUME, AND COST OF EACH PROPOSED ALTERNATIVE, THE COMMENTS RECEIVED FROM THE PUBLIC AND THE OHIO EPA AND THE STATE AND FEDERAL ENVIRONMENTAL REQUIREMENTS, ALTERNATIVE 5 - THERMAL TREATMENT OF "HOT SPOT" SOIL HAS BEEN DETERMINED TO BE THE MOST APPROPRIATE ALTERNATIVE. HOWEVER, THE SELECTED REMEDY HAS BEEN MODIFIED TO INCLUDE AN ADDITIONAL VOLUME OF SOIL FROM 27,000 C.Y. TO 32,000 C.Y. (SEE ALTERNATIVE 5 ON PAGE 12). THIS RESULTS IN AN ADDITIONAL \$1,000,000 FOR A TOTAL OF \$25,000,000.

THIS ALTERNATIVE PROVIDES ADEQUATE PROTECTION TO PUBLIC HEALTH AND ENVIRONMENT AND SIGNIFICANTLY REDUCES THE VOLUME, TOXICITY, AND MOBILITY OF CONTAMINANTS. THIS ALTERNATIVE UTILIZES TREATMENT TECHNOLOGIES, PERMANENT SOLUTIONS TO THE MAXIMUM EXTENT PRACTICABLE, AND IS COST-EFFECTIVE.

A SITE PLAN AND CROSS SECTION OF ALTERNATIVE 5 ARE PRESENTED IN FIGURES 6 AND 7 RESPECTIVELY. THE COMPONENTS OF THE SELECTED ALTERNATIVE ARE DESCRIBED AS FOLLOWS:

- ! ACCESS AND DEED RESTRICTIONS: A FENCE WILL BE EXTENDED AROUND THE SITE PERIMETER TO ASSURE UNAUTHORIZED PERSONNEL FROM INTERFERING WITH ONGOING REMEDIAL ACTIONS AND PREVENTING HUMAN AND ANIMAL EXPOSURE TO SITE CONTAMINANTS. DEED RESTRICTIONS ARE NECESSARY TO CONTROL THE USE OF THE PROPERTY ONCE THE REMEDY IS IN PLACE.
- ! ELIMINATION OF ONSITE SURFACE WATER: SURFACE WATER IN BOTH ONSITE PONDS WILL BE COLLECTED BY MECHANICAL METHODS AND TREATED PRIOR TO DISCHARGE. THE SOUTH AND EAST DRAINAGE DITCH WILL BE RE-ROUTED TO AN UNCONTAMINATED AREA BEYOND THE SITE. SEDIMENTS EXCAVATED FROM THE DITCHES WILL BE TREATED ALONG WITH ONSITE SOILS. SURFACE WATER IN DITCHES WILL BE TREATED PRIOR TO DISCHARGE.
- ! EXCAVATION AND INCINERATION OF BURIED DRUMS, TANKS, "HOT SPOT" SOILS, AND SEDIMENTS: A MOBILE INCINERATOR WILL BE ASSEMBLED ON-SITE TO INCINERATE APPROXIMATELY 1,600 DRUMS (88,000 GALLONS OF WASTE), FOUR TANKS WITH VOLUME RANGING FROM 1,000 TO 7,500 GALLONS OF WASTE, 32,000 CUBIC YARDS OF CONTAMINATED SOILS, INCLUDING 1,500 CUBIC YARDS OF CONTAMINATED SEDIMENTS. PERFORMANCE STANDARDS FOR INCINERATORS OF HAZARDOUS WASTE ARE DESIGNATED IN 40 CFR 264.343. THE DESTRUCTION AND REMOVAL EFFICIENCY (DRE) FOR EACH PRINCIPLE ORGANIC HAZARDOUS CONSTITUENT (POHC) IS 99.99 PERCENT, THEREBY PROVIDING LEVEL OF ASSURANCE THAT OTHER CONSTITUENTS ARE ALSO BEING DESTROYED. FOR PCBS AND DIOXINS THE DRE IS 99.9999% FOR EACH POHC. INCINERATION OF WASTE CAN BE COMPLETED WITHIN 5 YEARS. AIR MONITORING WILL BE CONDUCTED TO ASSURE NO AIR QUALITY STANDARDS ARE VIOLATED AS A RESULT OF THE EXCAVATION AND INCINERATION OF SOILS, SEDIMENTS, AND DRUMS.
- ! INSTALLATION OF A DOUBLE SYNTHETIC LINER: THE INCINERATED MATERIAL WOULD BE DISPOSED OF IN AN ON-SITE RCRA LANDFILL. THIS REQUIRES THE CONSTRUCTION OF AN UNDERLYING DOUBLE SYNTHETIC LINER. SEE FIGURE 8. THE LINER PROPOSED SATISFIES EPA/530-SW-85-014, "MINIMUM GUIDANCE ON DOUBLE LINER SYSTEMS FOR LANDFILLS AND SURFACE IMPOUNDMENTS, DESIGN, CONSTRUCTION AND OPERATION."

GROUNDWATER AND LEACHATE MONITORING WILL BE REQUIRED TO EVALUATE THE PERFORMANCE OF THE LANDFILL.

- ! REMOVAL OF ONSITE STRUCTURES: ALL ONSITE STRUCTURES WOULD BE DEMOLISHED OR DISMANTLED AND DISPOSED OF ONSITE. STRUCTURES PLACED INTO AN ON-SITE RCRA LANDFILL DO NOT REQUIRE DECONTAMINATION AS DESIGNATED IN 40 CFR 264.114.
- ! INSTALLATION OF A VERTICAL BARRIER: A SOIL-BENTONITE SLURRY WALL APPROXIMATELY THREE FEET THICK WOULD BE CONSTRUCTED AROUND THE PERIMETER OF THE SITE TO A DEPTH OF APPROXIMATELY 40 FEET. THIS DEPTH WOULD INCLUDE SIX FEET OF PENETRATION INTO THE BEDROCK TO ASSURE A GOOD SEAL. THE PERMEABILITY OF THE SLURRY WALL WILL ACHIEVE APPROXIMATELY 10^{-7} CM/SEC. THE SLURRY WALL WILL PREVENT LATERAL MIGRATION OFFSITE OF GROUNDWATER AND FREE PRODUCT.
- ! INSTALLATION OF GROUNDWATER EXTRACTION SYSTEM: A NETWORK OF 220 WELLS INSTALLED ON A 50 FT. GRID SYSTEM OVER THE SITE, AND A PUMPING RATE OF 30 GPM WAS ASSUMED. THESE FIGURES WILL HAVE TO BE REFINED BY PERFORMING IN-FIELD PUMPING TESTS FOR FINAL DESIGN. TWELVE OF THE 220 WELLS WILL EXTRACT GROUNDWATER FROM THE INTERMEDIATE UNITS. THE EXTRACTED WATER WILL BE TREATED ONSITE.
- ! GROUNDWATER PUMP AND TREAT SYSTEM: THE REMEDIATION FOR GROUNDWATER INCLUDES DEWATERING OF THE WATER TABLE AQUIFER AND STAGNATING CONTAMINANT MIGRATION IN THE INTERMEDIATE UNITS. CLEAN-UP OF THE INTERMEDIATE UNIT CAN OCCUR WITHIN 5 TO 10 YEARS. THE GROUNDWATER PUMPING WILL BE PERPETUAL FOR GRADIENT CONTROL PURPOSES. THE TREATMENT WILL CONSIST OF PHYSICAL TREATMENT INCLUDING PRECIPITATION, FLOCCULATION, COAGULATION, OIL AND WATER SEPARATION, FILTRATION, AND CARBON ADSORPTION. THE EFFLUENT LEVELS WILL ATTAIN FEDERAL AND/OR STATE WATER QUALITY STANDARDS. IN ABSENCE OF STANDARDS, DISCHARGE LEVELS WILL ATTAIN THE BEST AVAILABLE TECHNOLOGY ECONOMICALLY ACHIEVABLE CRITERIA. IT IS UNLIKELY THAT AIR EMISSIONS FROM THE TREATED WATER WILL RESULT, HOWEVER THE APPROPRIATE MONITORING CONTROLS WILL BE TAKEN. THE DISCHARGE POINT WILL BE DOWNGRADIENT APPROXIMATELY 3500 FEET SOUTHEAST OF THE SITE.
- ! INSTALLATION OF A MULTI-LAYER CAP: A MULTI-LAYER CAP WOULD BE INSTALLED OVER THE SITE TO PREVENT CONTACT WITH SURFACE SOILS AND GREATLY REDUCE THE VOLUME OF WATER INFILTRATION THROUGH THE UNSATURATED ZONE. PRIOR TO PLACING THE CAP THE SITE WOULD BE REGRADED TO PROVIDE SITE DRAINAGE AND PREVENT WATER FROM PONDING ON SITE. THE LAYER WOULD CONSIST OF ONE FOOT OF TOP SOIL (LOAM), ONE FOOT OF EARTH CLEAN FILL, FILTER FABRIC, HIGH DENSITY POLYETHYLENE (HDPE) DRAINAGE NET, AND A TWO FOOT COMPACTED CLAY LAYER. THE MULTI-LAYER CAP IS IN ACCORDANCE WITH PERFORMANCE STANDARDS LISTED IN 40 CFR 264.310. A RCRA COVER DESIGN IS SITE SPECIFIC AND THE ULTIMATE DESIGN WILL BE DETERMINED DURING THE REMEDIAL DESIGN PHASE. THE DIAGRAM PROVIDED IN FIGURE 9 IS IN ACCORDANCE WITH RCRA GUIDELINES.
- ! RUNOFF MONITORING: SURFACE WATER AND SEDIMENT SAMPLES WILL BE COLLECTED AND ANALYZED ON A QUARTERLY BASIS FROM THE SOUTHEAST DISCHARGE POINT. MONITORING WILL DETECT ANY MIGRATION OF SITE CONTAMINATION ORIGINATING IN SOILS AND SEDIMENTS. MONITORING WILL BE AN ONGOING ACTIVITY.
- ! GROUNDWATER MONITORING: GROUNDWATER IN THE WATER TABLE, INTERMEDIATE, AND UPPER SHARON AQUIFER, WILL BE MONITORED TO DETECT ANY CONTAMINANT MIGRATION. SAMPLES WILL BE TAKEN AND ANALYZED ON A QUARTERLY BASIS AT SEVEN MONITORING LOCATION POINTS. MONITORING WILL BE AN ONGOING ACTIVITY FOR A MINIMUM OF 30 YEARS.
- ! RELOCATION OF THE WATSON RESIDENCE AND CEMENT PLANT PROPERTY: THE INSTALLATION OF THE SLURRY WALL, MULTI LAYER CAP, AND REROUTING OF THE SOUTHERN AND EASTERN DRAINAGE DITCH, COULD NOT BE COMPLETED DUE TO THE LOCATION OF THE WATSON'S AND CEMENT PLANT PROPERTY. ADDITIONALLY, THERE IS A RISK ASSOCIATED WITH SOILS THAT EXCEED 10^{-6} THAT ALSO WARRANTS REMEDIATION. THEREFORE, RELOCATION OF THE WATSON'S RESIDENCE AND ACQUISITION OF THE CEMENT PLANT PROPERTY ARE NECESSARY TO ACCOMPLISH REMEDIATION AT THE SITE. THE PROPER STEPS ARE BEING UNDERTAKEN WITH THE AFFECTED PARTIES AND APPROPRIATE AGENCIES.

THE 30 YEARS PRESENT WORTH VALUE FOR THE SELECTED ALTERNATIVE AT A DISCOUNT RATE OF 10 PERCENT, IS \$25,000,000. THE BREAKDOWN OF THE ESTIMATED COST IS PRESENTED IN TABLE 3.

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STATUTORY DETERMINATIONS

PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

THE RISKS ASSOCIATED WITH DIRECT CONTACT WITH, OR INGESTION OF SURFACE AND SUBSURFACE SOILS, AND SEDIMENTS WILL BE ELIMINATED BY THE INSTALLATION OF THE MULTI-LAYER CAP. ADDITIONALLY, THE CONTAMINATED SOILS REFERRED TO AS "HOT SPOTS" WILL BE TREATED AND CONTAINED IN AN ONSITE RCRA LANDFILL, WHICH POTENTIALLY ELIMINATES MIGRATION INTO GROUNDWATER. ANY LEACHATE GENERATED WOULD BE EXTRACTED AND TREATED ONSITE.

ONSITE INCINERATION MAY RESULT IN SHORT-TERM LOW LEVEL EMISSIONS OF ORGANICS IN THE SOIL FEED, AND PRODUCTS OF INCOMPLETE COMBUSTION. THERE WILL BE AN AIR EMISSIONS CONTROL SYSTEM ON THE INCINERATION TO DECREASE PARTICULATE MATTER TO THE PERMITTED LEVELS. THUS, RISKS ASSOCIATED WITH INHALATION WILL BE CONTROLLED.

THE COMPONENTS CONTRIBUTING TO PROTECTION FROM GROUNDWATER ASSOCIATED RISKS INCLUDE THE INSTALLATION OF VERTICAL BARRIERS, GROUNDWATER EXTRACTION WELLS FOLLOWED BY TREATMENT. THE BARRIER REDUCES CONTAMINATED GROUNDWATER FROM MIGRATING OFF-SITE, AND IN COMBINATION WITH THE EXTRACTION SYSTEM, IT REDUCES THE RATE OF DOWNWARD CONTAMINANT MOVEMENT. THIS REMEDIATION ALONG WITH TREATMENT DECREASES THE LONG-TERM HEALTH RISKS ASSOCIATED WITH GROUNDWATER.

ELIMINATION OF SURFACE WATER WILL ELIMINATE INTERMITTENT EXPOSURE TO SURFACE WATER THROUGH INGESTION OR ABSORPTION. THE SURFACE WATER WILL BE TREATED IN THE SAME MANNER AS GROUNDWATER. THUS, RISKS ASSOCIATED WITH SURFACE WATER WILL BE ELIMINATED.

THE EXCAVATION OF BURIED DRUMS AND TANKS, AND THE DEMOLITION OF ON-SITE STRUCTURES, MAY LEAD TO SHORT-TERM INCREASES IN FUGITIVE DUST AND POSSIBLE VOLATILE ORGANICS WHICH MAY LEAD INTO SHORT-TERM HEALTH RISKS. DUST CONTROL MEASURES WOULD BE EMPLOYED DURING THIS TASK, THUS MITIGATING THE POTENTIAL FOR HEALTH RISKS FROM EXPOSURE TO DUST.

THE TECHNOLOGIES UNDER THIS ALTERNATIVE ACHIEVE ADEQUATE PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT. ACCESS AND DEED RESTRICTIONS, AND INSTITUTIONAL CONTROLS WILL ENSURE THAT NO FUTURE ACTION WILL INTERFERE WITH THE COMPONENTS OF THE REMEDIAL ALTERNATIVE, THUS, ASSURING LONG-TERM PROTECTIVENESS.

ATTAINMENT OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

THE SELECTED ALTERNATIVE IS DESIGNED TO MEET FEDERAL AND STATE REQUIREMENTS THAT ARE APPLICABLE OR RELEVANT AND APPROPRIATE. THE REQUIREMENTS FOR THE SELECTED ALTERNATIVE, THERMAL TREATMENT OF "HOT SPOT" SOILS, ARE PRESENTED IN TABLE 4.

COST EFFECTIVENESS

THE SELECTED REMEDY REPRESENTS THE BEST BALANCE ACROSS THE EVALUATION CRITERIA. IT IS U.S. EPA'S POLICY TO SELECT A REMEDY WHICH SIGNIFICANTLY REDUCES TOXICITY, MOBILITY, AND VOLUME OF HAZARDOUS CONSTITUENTS AND MINIMIZES LONGTERM MANAGEMENT.

THE SELECTED REMEDY FOR THE SUMMIT NATIONAL SITE INCLUDES GENERAL SITE PREPARATION, INCINERATION, EXCAVATION AND LOADING OF CONTAMINATED MATERIAL, A DOUBLE LINER SYSTEM, A MULTI-LAYER CAP, GROUNDWATER EXTRACTION AND TREATMENT SYSTEM, AND MONITORING AT A PRESENT WORTH COST OF \$25,000,000. THE VARIABLE FACTORS THAT SIGNIFICANTLY EFFECT THE RELATIVE COST DIFFERENCES BETWEEN ALTERNATIVES ARE IN-SITU TREATMENT, THE INSTALLATION OF THE DOUBLE LINER SYSTEM, AND THE VOLUME OF SOILS TO BE TREATED AND HANDLED.

THERMAL TREATMENT IS A PROVEN TECHNOLOGY WHICH CAN EFFECTIVELY DESTROY ORGANIC CONTAMINATION AT A REASONABLE COST. THE AMOUNT OF SOILS DEFINED AS "HOT SPOT" SOILS EQUIVALENT TO 32,000 C.Y., IS BASED ON HISTORICAL DATA, CHEMICAL CONCENTRATIONS, AND ESTIMATED HEALTH RISKS AND RESIDUAL RISKS. THE DELINEATION OF "HOT SPOT"

SOILS PROVIDES AN INCREASED LEVEL OF PROTECTION REDUCING THE UPPERBOUND LIFETIME CANCER RISK ASSOCIATED WITH THE SITE FROM 2×10^{-4} TO 2×10^{-5} . THIS REMOVAL SCENARIO REPRESENTS THE BEST BALANCE BETWEEN PROTECTIVENESS, TECHNICAL FEASIBILITY, AND COST-EFFECTIVENESS.

THE COSTS ASSOCIATED WITH THE DOUBLE LINER SYSTEM ARE DIRECTLY RELATED TO THE VOLUME OF SOILS TO BE TREATED. THE DOUBLE LINER SYSTEM IS A REQUIREMENT AND PROVIDES AN INCREASED LEVEL OF PROTECTION BY CONTAINING INORGANIC RESIDUALS IN THE TREATED SOILS. A DETAILED COST SUMMARY FOR THE SELECTED ALTERNATIVE IS PRESENTED IN TABLE 3.

UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE.

ALL ALTERNATIVES WERE CAREFULLY EVALUATED ACCORDING TO THE EVALUATION CRITERIA. AFTER BALANCING THE OUTCOMES OF THE VARIOUS ALTERNATIVES, THE SELECTED REMEDY IS THE MOST APPROPRIATE SOLUTION FOR THE SUMMIT NATIONAL SITE. THIS SELECTED REMEDY PROVIDES PERMANENT PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT FROM RISKS ASSOCIATED WITH SOILS, SEDIMENTS, SURFACE WATER AND GROUNDWATER. PROTECTION IS ACHIEVED BY UTILIZING ALTERNATIVE TREATMENT SYSTEM THAT DESTROYS CONTAMINANTS TO NON-HAZARDOUS LEVELS. THE LONG-TERM EFFECTIVENESS IS ACHIEVED WITHIN A 5 YEAR TIME FRAME WITHOUT CAUSING POTENTIAL RISKS. THIS REMEDY CAN BE READILY IMPLEMENTED AT A REASONABLE COST AND REPRESENTS THE PRACTICABLE EXTENT TO WHICH PERMANENT SOLUTIONS AND TREATMENT TECHNOLOGIES CAN BE UTILIZED AT THE SITE.

PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT

THE SELECTED REMEDY ADDRESSES THE PRINCIPAL THREATS POSED BY THE SITE THROUGH THE USE OF TREATMENT TECHNOLOGIES, THUS SATISFYING THE STATUTORY PREFERENCE FOR REMEDIES THAT EMPLOY TREATMENT AS A PRINCIPAL ELEMENT.

OPERATION AND MAINTENANCE

SEVERAL OPERATION AND MAINTENANCE (O&M) COSTS ARE ASSOCIATED WITH POST CLOSURE ACTIVITIES AFTER COMPLETION OF THE REMEDIAL ACTION. THE O&M COSTS WERE ESTIMATED ON AN ANNUAL BASIS OVER 30 YEARS. THE O&M FOR THE SELECTED ALTERNATIVE WILL REQUIRE ONGOING MAINTENANCE AND MONITORING OF THE ONSITE LANDFILL AND CAP CONSTRUCTION, GROUNDWATER EXTRACTION SYSTEM, WATER TREATMENT SYSTEM (UP TO 12 YEARS), RUNOFF AND GROUNDWATER MONITORING. THE O&M COSTS ARE PRESENTED IN TABLE 3.

STATE AGREEMENTS

A FINANCIAL AGREEMENT WITH THE STATE OF OHIO WOULD BE NEEDED IN THE EVENT NEGOTIATIONS WITH THE POTENTIAL RESPONSIBLE PARTIES ARE UNSUCCESSFUL. SECTION 104(C)(3) OF CERCLA SETS FORTH THE STATE'S FINANCIAL RESPONSIBILITIES IN REMEDIAL ACTIONS PROVIDED UNDER CERCLA. THE STATE FINANCIAL RESPONSIBILITIES IN THE PROPOSED REMEDIAL ACTION WOULD INCLUDE PAYMENT OR ASSURANCE OF PAYMENT OF 10% OF THE COSTS OF REMEDIAL ACTION, AND ASSURANCE OF ALL FUTURE O&M COSTS AFTER THE INITIAL 1 YEAR PERIOD OF THE REMEDIAL ACTION. WITH RESPECT TO O&M COSTS FOR GROUND AND SURFACE WATER RESTORATION, THE STATE FINANCIAL RESPONSIBILITIES WOULD BE INCURRED AFTER AN INITIAL 10 YEAR PERIOD.

THE CAPITAL COSTS OF THE REMEDIAL ACTION WILL BE COVERED UNDER A STATE SUPERFUND CONTRACT BETWEEN THE STATE AND THE U.S. EPA AT THE COMPLETION OF DESIGN OF THE REMEDIAL ALTERNATIVE. THE ANNUAL OPERATION AND FUTURE O&M COSTS WILL BE COVERED UNDER A COOPERATIVE AGREEMENT BETWEEN THE STATE AND THE U.S. EPA AT THE COMPLETION OF DESIGN OF THE REMEDIAL ALTERNATIVE.

FUTURE ACTIONS

THE NEED FOR ANY FUTURE ACTIONS FOR THE SUMMIT NATIONAL SITE WILL BE EXPLORED DURING PRE-DESIGN. PRE-BURN TESTS WILL BE REQUIRED TO DEMONSTRATE THE VARIOUS TYPE OF THERMAL TREATMENT PROCESSES THAT ARE APPLICABLE FOR THE PARTICULAR WASTE AT THE SUMMIT NATIONAL SITE. PUMPING TESTS WILL BE DONE TO REFINE THE EXACT LOCATION AND NUMBERS OF EXTRACTION WELLS TO ENHANCE PUMPING OF THE WATER TABLE AND INTERMEDIATE AQUIFERS. THESE PRE-DESIGN ACTIONS AND ADDITIONAL INFORMATION WILL BE USED DURING THE DESIGN, AND COST ESTIMATES WILL BE REVISED TO REFLECT A MORE ACCURATE COST FOR THE PROJECT.

SCHEDULE

THE FOLLOWING IS A PRELIMINARY SCHEDULE ESTIMATED FOR IMPLEMENTATION OF THE SELECTED REMEDIAL ALTERNATIVE. THIS IS A TENTATIVE SCHEDULE AND IS SUBJECT TO CHANGE PENDING NEGOTIATIONS WITH THE RESPONSIBLE PARTIES, AND UNFORESEEN OBSTACLES RELATED TO DESIGN AND CONSTRUCTION.

APPROVAL OF REMEDIAL ACTION	JUNE, 1988 (SIGN ROD)
ESTIMATED DESIGN PERIOD	15 MONTHS
COMPLETE DESIGN	AUGUST, 1989
ADVERTISE FOR COMPETITIVE BIDS	SEPTEMBER, 1989
OPEN BIDS	OCTOBER, 1989
CONTRACT AWARD	NOVEMBER, 1989
NOTICE TO PROCEED	DECEMBER, 1989
ESTIMATED CONSTRUCTION PERIOD	5 YEARS
CONSTRUCTION COMPLETE	DECEMBER, 1994

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RESPONSIVENESS SUMMARY

SUMMIT NATIONAL SITE
DEERFIELD, OHIO

THE U.S. ENVIRONMENTAL PROTECTION AGENCY (U.S. EPA) HELD A PUBLIC COMMENT PERIOD FROM FEBRUARY 12, 1988 THROUGH MARCH 21, 1988, FOR INTERESTED PARTIES TO COMMENT ON U.S. EPA'S FEASIBILITY STUDY AND PROPOSED PLAN (DATED FEBRUARY 12, 1988) FOR THE SUMMIT NATIONAL SITE. DURING THE PUBLIC COMMENT PERIOD, THE U.S. EPA HELD A PUBLIC MEETING AT THE AMERICAN LEGION HALL IN DEERFIELD, OHIO, ON FEBRUARY 29, 1988. THE PURPOSE OF THE PUBLIC COMMENT PERIOD IS TO PROVIDE AN OPPORTUNITY FOR CITIZENS, STATE AND LOCAL OFFICIALS, POTENTIALLY RESPONSIBLE PARTIES (PRPS) AND OTHER INTERESTED AND AFFECTED PARTIES, REGARDING THE SELECTED REMEDIAL ALTERNATIVE FOR THE SUMMIT NATIONAL SITE. THIS RESPONSIVENESS SUMMARY SUMMARIZES THE MAJOR ISSUES RAISED BY THE PUBLIC AND ADDRESSES THEM AS PART OF THE RECORD OF DECISION (ROD) PROCESS.

THE RESPONSIVENESS SUMMARY IS DIVIDED INTO THREE MAJOR SECTIONS THAT ADDRESS GENERAL AND SPECIFIC COMMENTS RECEIVED FROM THE PUBLIC, STATE, AND PRPS.

1. PUBLIC COMMENTS ON THE REMEDIAL ALTERNATIVES - COMMUNITY CONCERNS NINE COMMUNITY GROUPS SUBMITTED WRITTEN COMMENTS TO U.S. EPA DURING THE PUBLIC COMMENT PERIOD: KENT ENVIRONMENTAL COUNCIL, DEERFIELD TOWNSHIP, CITIZENS ACTIVELY PROTECTING SITES, MRS. P. KING, MRS. A. TURNBALL, MR. AND MRS. HUCHOK, MR. T. EDWARD, MR. R. RINGEN, AND MRS. DORIS CARVER.

THE COMMENTS ARE ORGANIZED AND ADDRESSED ACCORDING TO THE FOLLOWING CATEGORIES:

A. START-UP OF REMEDIAL ACTION COMMENT:

IN GENERAL, THE COMMUNITY IS CONCERNED THAT ONE AND ONE HALF YEARS IS TOO LATE TO START CLEANING UP THE SUMMIT NATIONAL SITE. THEY REQUEST THAT U.S. EPA INITIATE THE CLEAN-UP AS SOON AS POSSIBLE AND THAT THE REMOVAL OF DRUMS BE THE TOP PRIORITY.

U.S. EPA'S RESPONSE:

ONCE THE REMEDIAL ALTERNATIVE IS SELECTED AND FINALIZED WITH THE SIGNING OF THE ROD, U.S. EPA IS REQUIRED BY THE LAW TO NOTIFY THE POTENTIALLY RESPONSIBLE PARTIES (PRPS) AND REACH AN AGREEMENT WITHIN 120 DAYS THAT WILL PROVIDE THE PRPS THE OPPORTUNITY TO UNDERTAKE THE SELECTED REMEDY. IF NEGOTIATIONS WITH THE PRPS FAIL, THEN U.S. EPA WILL FUND THE CLEAN-UP WHILE LITIGATION CONTINUES. THE AVERAGE TIME FRAME FOR A COMPLEX SITE SUCH AS SUMMIT NATIONAL, IS APPROXIMATELY 15 MONTHS. THE SUMMIT NATIONAL SITE IS A VERY COMPLEX PROJECT AND ANY REMEDIAL ACTION MUST BE DESIGNED AND PLANNED CAREFULLY TO AVOID ANY ADVERSE IMPACTS DURING ITS IMPLEMENTATION. THE SELECTED ALTERNATIVE DOES INCLUDE THE REMOVAL OF DRUMS. CURRENTLY, DRUM CONTENTS ARE NOT MIGRATING FROM THE SITE. IN THE EVENT THAT DRUMS ARE SUSPECTED OF LEAKING AND THREATENING WATER SUPPLIES AT ANY TIME PRIOR TO IMPLEMENTATION OF THE SELECTED REMEDIAL ACTION, U.S. EPA HAS THE AUTHORITY TO TAKE ACTION. U.S. EPA IS CURRENTLY CONSIDERING A MONITORING PROGRAM TO DETECT SUCH AN EVENT. THIS PROPOSED MONITORING PROGRAM WOULD BE IN OPERATION UNTIL AND DURING REMEDIAL ACTION AT THE SUMMIT NATIONAL SITE.

B. EMISSION CONTROLS ON THE INCINERATOR COMMENT:

AN ENVIRONMENTAL GROUP QUESTIONED IF THE PROPOSED INCINERATOR HAD ANY EMISSIONS CONTROL.

U.S. EPA'S RESPONSE:

THE ON-SITE INCINERATOR WILL BE DESIGNED SO THAT ALL APPLICABLE REQUIREMENTS, STATE AND FEDERAL REGULATIONS LISTED ON TABLE 6-1 OF THE FEASIBILITY STUDY (FS) AND TABLE 4 OF THE RECORD OF DECISION WILL BE MET (I.E., RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), CLEAN AIR ACT). THE EMISSION CONTROL SYSTEM FOR AN INCINERATOR TYPICALLY CONSISTS OF A GAS SCRUBBER SYSTEM AND A PARTICULATES SCRUBBER SYSTEM AS SHOWN ON THE ATTACHED SCHEMATIC (FIGURE 1). EXHAUST GASES FROM THE KILN ENTER A SECONDARY CHAMBER AFTER BURNER OPERATING AT TEMPERATURES BETWEEN 1400 DEGREE F. AND 2400 DEGREE F. TO COMPLETE OXIDATION OF THE COMBUSTIBLE WASTE. PRIOR TO RELEASE TO THE ATMOSPHERE, EXHAUST GASES FROM THE AFTER BURNER PASS THROUGH AIR POLLUTION CONTROL UNITS FOR PARTICULATE AND ACID GAS REMOVAL. ALL OF THE EXISTING MOBILE ROTARY KILN SYSTEMS USE A SCRUBBER AS PART OF THEIR AIR POLLUTION CONTROL SYSTEM. GENERAL OPERATING STANDARDS FOR INCINERATORS TREATING HAZARDOUS WASTE ARE OUTLINED BY FEDERAL REGULATIONS CONTAINED IN 40 CFR 265, SUBPART 0 OF RCRA (FIGURE 1).

C. GROUNDWATER AND SURFACE WATER TREATMENT PROCESS COMMENT:

LOCAL ENVIRONMENTAL GROUPS QUESTIONED WHETHER THE TREATMENT PROCESS AND IF SUCH PROCESS COMPLIES WITH WATER QUALITY STANDARDS AND THE SAFE DRINKING WATER ACT.

U.S. EPA'S RESPONSE:

THE SURFACE WATER AND GROUNDWATER TREATMENT SYSTEM WILL BE DESIGNED TO REMOVE BOTH ORGANIC AND INORGANIC CONTAMINATION. THIS SYSTEM WILL INCLUDE PHYSICAL AND CHEMICAL TREATMENT TECHNOLOGIES. THE USED ACTIVATED CARBON UNITS RESULTING FROM THE TREATMENT PROCESS WILL BE DISPOSED AS A HAZARDOUS WASTE ACCORDING TO FEDERAL HAZARDOUS DISPOSAL STANDARDS. THE TREATMENT PROCESS ITSELF IS NOT REGULATED BY THE SAFE DRINKING WATER ACT SINCE ITS EFFLUENT IS NOT A DRINKING WATER SOURCE. THE DISCHARGE OF THE TREATED WATER WILL MEET THE WATER STANDARDS OR LIMITS SET FORTH UNDER THE NATIONAL POLLUTION DISCHARGE AND ELIMINATION SYSTEM. THE TREATMENT SYSTEM COULD CEASE TO OPERATE ONCE THE UPPER INTERMEDIATE AQUIFER IS RESTORED IN APPROXIMATELY 5 TO 10 YEARS BASED ON DATA OBTAINED DURING THE REMEDIAL INVESTIGATION (RI). STANDARDS UNDER THE CLEAN WATER ACT WOULD HAVE TO BE MET AT THIS TIME.

D. CONCERNS ABOUT DRINKING WATER SUPPLIES COMMENT:

MANY CITIZENS ARE UNHAPPY ABOUT THE EXISTENCE OF DUMPS IN THE AREA AND HOW IT IS AFFECTING THEIR RESIDENTIAL WELLS. ONE RESIDENT REQUESTED A FEDERAL AND STATE GRANT TO INSTALL AN ALTERNATIVE WATER SUPPLY TO RESIDENTS IN DEERFIELD, OHIO.

U.S. EPA'S RESPONSE:

THE U.S. EPA GIVES HIGH PRIORITY TO CLEANING UP FACILITIES WHERE THE RELEASE OF HAZARDOUS SUBSTANCES HAS CONTAMINATED THE DRINKING WATER SUPPLIES. THE SUMMIT NATIONAL SITE HAS RELEASED CONTAMINANTS INTO THE GROUNDWATER, BUT HAS NOT AFFECTED THE SURROUNDING RESIDENTIAL WATER SUPPLIES. IF THESE RESIDENTIAL WELLS

BECOME AFFECTED BY THE SITE, THEN U.S. EPA HAS THE AUTHORITY TO EVALUATE RESPONSE ACTIONS THAT MAY INCLUDE A PROVISION FOR AN ALTERNATE WATER SUPPLY. THE PROPOSED GROUNDWATER MONITORING PROGRAM WOULD DETECT CONTAMINANT MIGRATION TO RESIDENTIAL WELLS. THE OHIO DEPARTMENT OF HEALTH (ODH) IS CURRENTLY DEVELOPING A PROTOCOL TO ADDRESS INDIVIDUAL REQUESTS FOR PRIVATE WELL SAMPLING. CITIZENS INTERESTED IN FINDING OUT MORE INFORMATION ABOUT ODH'S EFFORTS SHOULD CONTACT THAT AGENCY.

E. WHO ARE THE RESPONSIBLE PARTIES? COMMENT:

THE COMMUNITY REQUESTED A LIST OF THE RESPONSIBLE PARTIES.

U.S. EPA'S RESPONSE:

A LIST OF THE POTENTIALLY RESPONSIBLE PARTIES IDENTIFIED AND NOTIFIED BY THE U.S. EPA IS INCORPORATED IN THE ADMINISTRATIVE RECORD. THIS ADMINISTRATIVE RECORD IS AVAILABLE BOTH IN THE REPOSITORY LOCATED IN THE U.S. DEERFIELD POST OFFICE AND THE REGIONAL OFFICES IN CHICAGO, ILLINOIS.

F. CONCERNS ABOUT WILDLIFE

COMMENT:

A RESIDENT ASKED IF WILDLIFE IS AFFECTED BY THE SUMMIT NATIONAL SITE.

U.S. EPA'S RESPONSE:

DURING THE COURSE OF THE REMEDIAL INVESTIGATION, THERE WAS NO WILDLIFE OBSERVED AT THE SUMMIT NATIONAL SITE. THE SITE AREA IS FENCED AND THEREFORE LIMITS ACCESS TO ANIMALS. IN ADDITION, NO AQUATIC LIFE WAS OBSERVED IN THE ON-SITE PONDS OR NEARBY DITCHES.

G. PAST MINING ACTIVITIES COMMENT:

ONE RESIDENT ASKED HOW FAR THE OLD STRIP MINE EXTENDED.

U.S.EPA'S RESPONSE:

THE AREA OF PORTAGE COUNTY SURROUNDING THE SUMMIT NATIONAL SITE, HAS BEEN STRIP MINED EXTENSIVELY IN THE PAST. THE STRIP MINE PITS IN THE IMMEDIATE AREA OF THE SITE ARE LOCATED ON THE SOUTHERN HALF OF THE SITE AS WELL AS TWO IDENTIFIED AREAS SOUTH OF THE SITE WHERE THE CLOSED LANDFILL IS NOW LOCATED. THE APPROXIMATE LOCATIONS OF THE FORMER STRIP MINE PITS COVERED BY THE LANDFILL ARE SHOWN ON FIGURE 434 OF THE RI REPORT.

H. SURFACE WATER CONCERNS COMMENT:

A CITIZEN SUGGESTED A DIFFERENT ROUTE TO TRAP SURFACE WATER FROM GOING TO THE BERLIN RESERVOIR.

U.S. EPA'S RESPONSE:

THE PROPOSED DISCHARGE POINT FOR TREATED WATER WILL COMPLY WITH THE TECHNICAL REQUIREMENTS OF NPDES AND IS APPROXIMATELY 3,000 FEET SOUTHEAST OF THE SITE. THOUGH THIS DISCHARGE IS IN THE WATERSHED WHERE THE BERLIN RESERVOIR LIES, THE AMOUNT AND QUALITY OF THE DISCHARGE WATER WILL NOT IMPACT THE BERLIN RESERVOIR.

I. INORGANIC CONTAMINATION

COMMENT:

ONE RESIDENT ASKED WHAT INORGANIC COMPOUNDS WERE DETECTED AT THE SUMMIT NATIONAL SITE.

U.S. EPA'S RESPONSE:

THE INORGANIC CONTAMINANTS DETECTED IN EACH MEDIA ARE PRESENTED IN THE REMEDIAL INVESTIGATION REPORT VOLUMES

1 AND II. A SUMMARY OF THE MAJOR INORGANIC CONTAMINANTS IN EACH MEDIA IS PRESENTED IN ATTACHMENT 3 OF THIS DOCUMENT.

II. OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS

U.S. EPA RECEIVED COMMENTS FROM THE OHIO ENVIRONMENTAL PROTECTION AGENCY ON MARCH 15, 1988. U.S. EPA HAS TAKEN THE STATE'S COMMENTS AND ORGANIZED THEM INTO FOUR MAIN SUBJECT CATEGORIES TO FACILITATE RESPONSE AND ACCOUNT FOR ANY REPETITION OF COMMENTS. THE CATEGORIES ARE AS FOLLOWS: A. PUBLIC HEALTH EVALUATION B. SOILS AND SEDIMENTS C. REMEDIAL ACTION AND D. SELECTED ALTERNATIVE.

A. PUBLIC HEALTH EVALUATION

INDICATOR CHEMICAL SELECTION:

THE COMMENTER SUGGESTS THAT THE METHODOLOGY USED TO SELECT INDICATOR CHEMICALS DEVIATES FROM THE SUPERFUND PUBLIC HEALTH EVALUATION MANUAL.

U.S. EPA'S RESPONSE:

THE METHODOLOGY USED TO SELECT INDICATOR CHEMICALS GENERALLY FOLLOWS THE GUIDANCE IN THE SUPERFUND PUBLIC HEALTH EVALUATION MANUAL (EPA 1986) AND THE ENDANGERMENT ASSESSMENT HANDBOOK (PRC, 1985). THE SUPERFUND PUBLIC HEALTH EVALUATION MANUAL PROVIDES GUIDANCE IN DEVELOPING A PUBLIC HEALTH EVALUATION AT SUPERFUND SITES. CITING THE MANUAL'S PREFACE, IT IS DESIGNED TO BE FLEXIBLE ALLOWING THE USE OF PROFESSIONAL JUDGEMENT. THE MANUAL PROVIDES A RANGE OF PROCEDURES THAT MAY BE APPLICABLE AT ANY PARTICULAR SITE. THE PROCEDURE EMPLOYED, WHICH SELECTED CHEMICALS OF CONCERN FOR EACH MEDIUM BEING EVALUATED RATHER THAN ONE MASTER LIST, ALLOWED FOR EVALUATION OF THE GREATEST POTENTIAL RISK ASSOCIATED WITH ANY PARTICULAR EXPOSURE PATHWAY INVOLVING THAT MEDIUM. THIS APPROACH IS MOST USEFUL AT SITES SUCH AS SUMMIT NATIONAL WHERE A VERY LARGE NUMBER OF CHEMICALS HAVE BEEN DETECTED IN DIFFERENT MEDIA AT DIFFERENT CONCENTRATIONS AND OCCURRENCE FREQUENCY. THE VARIOUS TECHNOLOGIES THAT MAKE UP A REMEDIAL ALTERNATIVE WILL BE SCREENED AND SELECTED TO REMEDIATE CONTAMINATION ON A MEDIA-SPECIFIC BASIS. A MULTI-MEDIA LIST OF INDICATOR CHEMICALS WOULD INDICATE THAT CHEMICAL COMPOUNDS DETECTED IN ALL MEDIA OCCURRED IN SIMILAR CONCENTRATIONS, FREQUENCY, AND REPRESENTATIVENESS. THIS IS NOT THE CASE AT THE SUMMIT NATIONAL SITE. FOR INSTANCE, PCBS WERE DETECTED IN SOILS AND CHOSEN AS AN INDICATOR. SINCE PCBS WERE NOT DETECTED IN GROUNDWATER, USING THIS PARAMETER AS AN INDICATOR CHEMICAL IN GROUNDWATER WOULD BE OF NO USE.

QUALITATIVE RISKS:

THE COMMENTER SUGGESTS QUALITATIVE STATEMENTS OF RISK SHOULD BE MADE FOR THOSE SCENARIOS THAT CAN NOT BE EVALUATED QUANTITATIVELY.

U.S. EPA'S RESPONSE:

QUANTITATIVE RISKS FOR GROUNDWATER ARE PRESENTED IN THE RI/FS BASED ON FUTURE USE ASSUMING NO ACTION AND THE CONCENTRATIONS REMAIN AS THEY ARE NOW. THE SELECTED ALTERNATIVE PROVIDES A GROUNDWATER TREATMENT TECHNOLOGY THAT ELIMINATES THESE RISKS. THEREFORE, NO ADDITIONAL QUALITATIVE RISK CALCULATIONS FOR GROUNDWATER WOULD BE NECESSARY. CHEMICALS OF CONCERN IN GROUNDWATER MAY PRESENT A RISK TO RESIDENTS IN THE FUTURE IF THEY MIGRATE TO RESIDENTIAL WELLS. AS A WORST CASE, IT COULD BE ASSUMED THAT THE CONCENTRATIONS OF INDICATOR CHEMICALS BEING MEASURED IN MONITORING WELLS ARE FUTURE CONCENTRATIONS IN RESIDENTIAL WELLS. HOWEVER, BECAUSE THE PRIVATE WELLS ARE MOSTLY OPEN BOREHOLES IN BEDROCK, CHEMICALS FROM THE WATER-TABLE AND INTERMEDIATE UNIT COULD POTENTIALLY MIX WITH WATER FROM THE DEEPER AQUIFERS AT THESE LOCATIONS.

THERE ARE SEVERAL EXPOSURE ROUTES THAT COULD BE CONSIDERED COMPLETE AND COULD PRODUCE SIGNIFICANT RISK IF THE SPREAD OF CONTAMINATION IS NOT ADEQUATELY CONTAINED BY THE REMEDIAL ACTIONS. SINCE CONCENTRATIONS OF CONTAMINANTS ARE LOW FOR QUANTITATIVE RISK ASSESSMENTS FOR CONTAMINANTS THAT MIGHT MIGRATE ALONG THESE ROUTES, QUALITATIVE STATEMENTS OF RISK ARE INCLUDED BELOW TO HELP IDENTIFY THE POTENTIAL AREAS WHERE FUTURE RISK COULD INCREASE IN A NO ACTION SCENARIO.

THERE IS A POSSIBLE SUBSURFACE HYDRAULIC CONNECTION FOR CONTAMINATED SURFACE WATER TO MOVE SOUTHEAST ALONG

THE OLD STREAM COURSE FROM THE FIRST IMPOUNDMENT TO THE SECOND IMPOUNDMENT BELOW THE JONES (MANFREDI) LANDFILL. IF SIGNIFICANT RELEASE OF CONTAMINANTS WERE TO OCCUR, THOSE WATERS COULD CARRY CONTAMINANTS FROM THE SITE INTO THE BERLIN RESERVOIR VIA A SURFACE WATER CONNECTION FROM THE SECOND IMPOUNDMENT. IT IS LIKELY THAT DILUTION IN THE RESERVOIR BASIN WOULD REDUCE THE THREAT OF SIGNIFICANT EXPOSURE FOR CITIES USING THAT WATER SUPPLY. HOWEVER, THIS ROUTE IS A POTENTIAL RISK TO THE POPULATIONS OF THE CITIES AND COUNTIES THAT RELY ON THE WATERS OF BERLIN RESERVOIR FOR A DRINKING WATER SUPPLY.

SINCE SOME OF THE SOILS ON THE SITE ARE KNOWN TO BE HIGHLY CONTAMINATED, AN EXPOSURE ROUTE EXISTS THROUGH THE MOVEMENT OF FUGITIVE DUSTS FROM THE SITE. DUST MOVEMENT WOULD BE PARTICULARLY SIGNIFICANT DURING ANY CONSTRUCTION ACTIVITY AS WAS NOTED IN THE RI. IT IS ALSO POSSIBLE THAT SIGNIFICANT DUST MOVEMENT CAN AND DOES OCCUR DURING HIGH WIND CONDITIONS. THE VEGETATIVE COVER ON THE SITE IS POOR AND LARGE AREAS OF THE SITE ARE BARE. IF THE SITE IS LEFT UNCAPPED, LOCAL RESIDENTS COULD BE AT SOME RISK FROM EXPOSURE TO DUSTS BLOWN PAST THE SITE BOUNDARIES. BECAUSE CONSTRUCTION IS NOT A LONG TERM ACTIVITY, POTENTIAL EXPOSURE TO FUGITIVE DUST WOULD OCCUR ONLY OVER A SHORT TIME PERIOD. THIS OCCURRENCE WILL BE MONITORED CLOSELY AND THE NECESSARY PRECAUTIONS WILL BE TAKEN DURING THE IMPLEMENTATION OF THE REMEDIAL ACTION.

CURRENTLY, THE AREA OF CONTAMINATION IN THE GROUNDWATER APPEARS TO BE LOCALIZED IN THE UPPER AQUIFERS ALMOST ENTIRELY BENEATH THE SITE. IF CONTAMINANTS ARE LIBERATED FROM REMAINING CONTAMINATION IN SOILS OR IF DRUMS OF WASTE ARE NOT REMOVED FROM THE SITE, THERE IS A POTENTIAL RISK TO GROUNDWATER RESOURCES THAT MIGHT BECOME CONTAMINATED. SINCE THE GROUNDWATER HYDROLOGY BENEATH THE SITE IS NOT ENTIRELY DEFINED, IT IS POSSIBLE THAT PATHWAYS EXIST FOR CONTAMINANT MOVEMENT INTO DRINKING WATER WELLS. MANY OF THE AREA WELLS ARE OPEN BOREHOLES IN ROCK SO IT IS POSSIBLE THAT RESIDENTIAL WELLS COULD ACT AS A CONDUIT FOR CONTAMINANT MIGRATION TO THE DEEPER AQUIFER. PAST MINING ACTIVITIES AT THE SITE MAY ALSO HAVE LEFT CONDITIONS THAT COULD ALLOW FUTURE MIGRATION OF CONTAMINANTS TO DEEPER STRATA. IF CONDITIONS AT THE SITE ARE NOT ADEQUATELY REMEDIED, IT IS POSSIBLE THAT RESIDENTS OUTSIDE OF THE SITE BOUNDARY COULD BE EXPOSED TO SITE RELATED CONTAMINATION THROUGH FUTURE LEACHING AND MOVEMENT OF CONTAMINANTS IN GROUNDWATER.

QUALITATIVE RISK ASSESSMENTS FOR SURFACE WATER IN THE SECOND IMPOUNDMENT AND THE BERLIN RESERVOIR WERE CONSIDERED BUT NOT PERFORMED SINCE NO DIRECT SURFACE HYDRAULIC CONNECTION WAS ABLE TO BE MADE BETWEEN THE SITE AND THESE TWO SURFACE WATER BODIES. AS STATED IN THE RI, CONTAMINANTS FROM THE SITE THAT MAY DISCHARGE INTO THE BERLIN RESERVOIR VIA GROUNDWATER ARE FURTHER DILUTED BY SURFACE WATER IN THE RESERVOIR PRIOR TO A WATER SUPPLY INTAKE, TO CONCENTRATIONS THAT ARE WELL BELOW ACHIEVABLE DETECTION LIMITS. THEREFORE, THE SUMMIT NATIONAL SITE WOULD HAVE NO IMPACT ON PUBLIC HEALTH FROM USE OF WATER OBTAINED FROM THE CURRENT WATER SUPPLY INTAKE FROM THE BERLIN RESERVOIR. IT WAS CONCLUDED THAT CONTAMINATION IN THE SECOND IMPOUNDMENT IS POTENTIALLY MORE AFFECTED BY THE LANDFILL OPERATION AND THE ADJACENT SPOIL PILES THAN BY THE SITE.

B. SOIL AND SEDIMENTS

DEFINITION OF "HOT SPOT" SOILS:

THE COMMENTER SUGGESTS THAT THE AREAS SUBJECT TO SOIL TREATMENT HAVE NOT BEEN DEFINED ADEQUATELY.

U.S. EPA'S RESPONSE:

THE "HOT SPOT" SCENARIO WAS BASED ON ACHIEVING AN ACCEPTABLE LEVEL OF PROTECTION BY REDUCING THE RESIDUAL RISK ASSOCIATED WITH THE SITE OF 2×10^{-4} TO 3×10^{-5} . THE SELECTION OF SOIL BLOCK UNITS REPRESENTED A BALANCE BETWEEN PROTECTIVENESS, COST EFFECTIVENESS, AND IMPLEMENTABILITY. THE RATIONALE FOR SELECTION WAS SET AT CELLS EXCEEDING THE UPPERBOUND CANCER RISKS OF 1×10^{-5} . THE INITIAL 27,000 C.Y. REPRESENTED AN ECONOMIC COST REMOVAL SCENARIO WITH A RESIDUAL RISK OF 3×10^{-5} . AFTER REVIEWING THE SOIL BLOCKS UNITS, FURTHER CONSIDERATION HAS BEEN GIVEN TO THOSE ISOLATED SOIL BLOCK UNITS THAT EXCEED 1×10^{-5} . AS A RESULT, A NEW "HOT SPOT" SCENARIO HAS BEEN DEVELOPED REDUCING THE RESIDUAL RISK TO 2×10^{-5} . THE TOTAL VOLUME OF "HOT SPOT" SOILS IS 32,000 C.Y. WHICH INCLUDES APPROXIMATELY 3,000 C.Y. OF OFF SITE SOILS ALONG THE EASTERN AND SOUTHERN PERIMETER.

THIS SOIL REMOVAL SCENARIO IS DEPICTED IN FIGURE 2. THE ADDITIONAL COSTS ASSOCIATED WITH INCINERATING, AND HANDLING THE SOILS IS \$1,000,000.

SOIL LEACHABILITY:

THE COMMENTER SUGGESTS THAT A MORE PROTECTIVE ALTERNATIVE BE DEVELOPED BASED ON POTENTIAL LEACHING OF SOILS UNITS.

U.S. EPA'S RESPONSE:

ALTERNATIVE 7 INCINERATION OF ALL UNCONSOLIDATED MATERIAL AS PRESENTED IN THE FS, IS A MORE COMPLEX ALTERNATIVE BUT NOT NECESSARILY A MORE PROTECTIVE ALTERNATIVE. THIS ALTERNATIVE WOULD ELIMINATE ALL LEACHING OF SOIL AND COULD BE CONSIDERED AS A CLEAN CLOSURE OPTION. HOWEVER, THIS LEVEL OF ACTION DOES NOT NECESSARILY PROVIDE ADDITIONAL ENVIRONMENTAL BENEFITS OR PROTECTIVENESS.

THE SELECTED REMEDIAL ALTERNATIVE INCLUDES A CONTROLLED SYSTEM CONSISTING OF A MULTI-LAYER CAP, SLURRY WALL, AND GROUNDWATER PUMPING TO ACHIEVE GRADIENT CONTROL. THESE COMPONENTS WILL MINIMIZE WATER PASSING THROUGH THE RESIDUAL CONTAMINATED SOIL BLOCKS, THEREFORE MINIMIZING LEACHING. THE COMMENTERS SPECIFIC STATEMENTS CONCERNING LEACHING OF ANTIMONY TO GROUNDWATER WERE NOT ACCURATE. THE RI STATES THAT ANTIMONY IS MOBILE ONCE IN GROUNDWATER BECAUSE OF ITS SOLUBILITY. IT ALSO STATES THAT SORPTION TO CLAYS AND METAL OXIDES IS THE MOST IMPORTANT MECHANISM FOR REMOVING ANTIMONY FROM NATURAL WASTE. THIS CHARACTERISTIC WOULD SEEM NOT TO FAVOR LEACHING.

SOIL CLEAN-UP LEVELS:

THE COMMENTER QUESTIONS HOW THE EVALUATION OF SOIL BLOCKS ARE RELATED TO CLEAN-UP TARGET LEVELS FOR SOILS AND SEDIMENTS.

U.S. EPA'S RESPONSE:

AS EXPLAINED IN APPENDIX A OF THE RI (PAGE A-1), THE CANCER RISKS ASSOCIATED WITH SOIL BLOCKS WERE ESTIMATED BY COMPARING THE CONCENTRATIONS OF THE INDICATOR CHEMICALS PRESENT IN A SOIL BLOCK TO THOSE REPRESENTING A RANGE OF LIFETIME UPPERBOUND CANCER RISKS, AS INDICATED IN TABLE 3-2 OF THE FS. A CANCER RISK WAS THEN EXTRAPOLATED FOR THE CONCENTRATION PRESENT IN THE SOIL BLOCK. THE CANCER RISKS FOR EACH INDIVIDUAL INDICATOR CHEMICAL WERE THEN SUMMED ARITHMETICALLY TO DEVELOP A TOTAL UPPERBOUND LIFETIME CANCER RISK FOR THE SOIL BLOCK BEING ANALYZED. AN EXAMPLE CALCULATION FOR CELL BLOCK 4-5 AT 0-2 FT. FOLLOWS:

INDICATOR CHEMICAL CONCENTRATION		EXTRAPOLATED RISK FROM TABLE 3-2
BIS(2-ETHYLHEXYL)PHTHALATE	81,000	1.1 X 10 ⁻⁷
1,2-DICHLOROETHANE	4,300	8.0 X 10 ⁻⁷
HEXACHLOROBENZENE	0	0
PCB	590,000	5.4 X 10 ⁻³
PAH	0	0
TRICHLOROETHENE	86,000	1.9 X 10 ⁻⁶

TOTAL RISK= 5.4 X 10⁻³

THE CLEANUP LEVELS PRESENTED IN TABLE 3-2 ARE BASED ON A 10⁻⁶ CANCER RISK FOR EACH CHEMICAL PRESENTED. THEREFORE, THIS TABLE PROVIDES GENERAL GUIDANCE IN SELECTING CLEANUP GOALS. BECAUSE ALL OF THE CARCINOGENIC CHEMICALS INCLUDED IN THIS TABLE WERE NOT FOUND IN ALL SAMPLES FROM ALL LOCATIONS, OR DETECTED AT CONCENTRATIONS THAT EXCEED A 10⁻⁶ RISK LEVEL, IT IS INAPPROPRIATE TO SIMPLY DIVIDE THE CONCENTRATIONS LISTED BY THE TOTAL NUMBER OF CARCINOGENIC CHEMICALS LISTED TO DETERMINE CLEAN-UP CONCENTRATIONS THAT CORRESPOND TO A TOTAL RISK OF 10⁻⁶.

C. REMEDIAL ACTION
SLURRY WALL:

THE COMMENTER QUESTIONS HOW SOILS DURING THE CONSTRUCTION, OF THE SLURRY WALL WILL BE HANDLED.

U.S. EPA'S RESPONSE:

THE SLURRY WALL WILL BE CONSTRUCTED OUTSIDE OF THE LIMITS OF CONTAMINATED SOILS AND GROUND WATER PLUME. THEREFORE, NO CONTAMINATED SOILS WILL BE HANDLED DURING ITS CONSTRUCTION.

STOCKPILING:

THE COMMENTER SITES A RCRA WASTE PILE REQUIREMENT DUE TO STOCKPILING OF WASTES.

U.S. EPA'S RESPONSE:

THE STOCKPILE IS A SHORT TERM STAGING AREA, (I.E. LESS THAN 90 DAYS), WHERE THE CONTAMINATED SOILS WILL BE STORED PRIOR TO THEM BEING INCINERATED.

TEMPORARY SYNTHETIC MEMBRANE WILL BE PLACED UNDERNEATH THE STAGING AREA TO CONTAIN DRAINAGE FROM CONTAMINATED MATERIALS. THIS WOULD COMPLY WITH RCRA WASTE PILE REQUIREMENTS.

RCRA LANDFILL:

THE COMMENTER SITES A RCRA LANDFILL REQUIREMENTS OR 5 FT. SEPARATION BETWEEN THE WATER TABLE AND BOTTOM OF THE LANDFILL.

U.S. EPA'S RESPONSE:

THE CAPPING OF CONTAMINATED MATERIALS AND CONTINUAL PUMPING OF THE WATER TABLE TO STABILIZE THE DOWNWARD VERTICAL GRADIENT WILL PROVIDE ENOUGH SEPARATION BETWEEN THE RCRA LANDFILL AND THE WATER TABLE TO MEET THE 5 FT. REQUIREMENT FOR CITING A LANDFILL. ADDITIONAL HYDROGEOLOGICAL CHARACTERIZATION TO ADEQUATELY CONTROL GROUNDWATER MOVEMENT AND REMOVE CONTAMINATED WATER FROM THE INTERMEDIATE ZONE WILL BE CONDUCTED FOR THE FINAL DESIGN OF THE LANDFILL AND GROUNDWATER EXTRACTION SYSTEM.

RELIABILITY

THE COMMENTER SUGGESTS THAT RELIABILITY FOR THE LINER WAS INCORRECTLY EVALUATED AS AN EXTREMELY POSITIVE BENEFIT (++).

U.S. EPA'S RESPONSE:

THE CRITERIA OF RELIABILITY ASSESSED ON FIGURE 6-1 OF THE FS REPORT, APPLIES TO THE OVERALL ALTERNATIVE. THE NOTATION OF "++" ON FIGURE 6-1 FOR ALTERNATIVES 5 THROUGH 9 IS BASED ON THE ADDITION OF RELIABLE TREATMENT TECHNOLOGIES TO EACH ALTERNATIVE. CONSIDERING THE RCRA LANDFILL ALONE, THE NOTATION FOR RELIABILITY WOULD BE "+" AS SHOWN FOR ALTERNATIVE 4.

SEDIMENTS

THE COMMENTER QUESTIONS HOW SEDIMENTS WILL BE HANDLED.

U.S. EPA'S RESPONSE:

IN ALTERNATIVES 8 AND 9, AS WELL AS ALTERNATIVES 5 THROUGH 7, CONTAMINATED SEDIMENTS WILL BE EXCAVATED AND TREATED ON-SITE. APPROXIMATELY 1500 C.Y. OF OFF-SITE SEDIMENT WILL BE TREATED ALONG WITH THE ON-SITE SOILS.

THE RI/FS HAS ADDRESSED SEDIMENT CONTAMINATION ASSOCIATED WITH THE SUMMIT NATIONAL SITE. SIGNIFICANT MOVEMENT OF SURFACE WATER OFF-SITE HAD OCCURRED PRIOR TO THE RI SAMPLING AND ALSO WAS OCCURRING DURING THE RI FIELD ACTIVITIES. THE SAMPLES COLLECTED DURING THE RI WERE INDICATIVE OF ANY OFF-SITE TRANSPORT OF CONTAMINANTS VIA SURFACE AFTER. IN ADDITION, THE EMERGENCY ACTION PERFORMED SHORTLY AFTER THE RI SAMPLING (MARCH 1987), CORRECTED THE UNCONTROLLED OVERFLOW PROBLEM FROM THE EASTERN POND AND REGRADED PORTIONS OF THE SITE TO PREVENT RUNON/RUNOFF. OVERFLOW FROM THE EAST POND IS NOW CONTROLLED THROUGH DISCHARGE PIPES THAT DIRECT THE DISCHARGE TO THE FIRST IMPOUNDMENT.

DOUBLE SYNTHETIC LINER:

THE COMMENTER BELIEVES THAT THE CONSTRUCTION OF EXTRACTION WELLS AND A LINER WILL NOT PROVIDE FOR A SOUND INTEGRATABLE STRUCTURE, CONSIDERING THE LARGE NUMBER OF WELLS TO BE UTILIZED.

U.S. EPA'S RESPONSE:

THE INSTALLATION OF A DOUBLE SYNTHETIC LINER AND LEACHATE EXTRACTION SYSTEM AROUND THE PRE-INSTALLED GROUNDWATER EXTRACTION WELLS DOES NOT IMPACT THE INTEGRITY OF THE LINER. GUNDEL LINING CONSTRUCTION CORPORATION AND SCHLEGEL, TWO OF THE LARGEST LINER CONTRACTORS, HAVE PROVIDED CONSTRUCTION DETAILS THAT ILLUSTRATE ADEQUATE SEALS AT A POINT WHERE EXTRACTION WELLS AND LINERS MEET (SEE ATTACHED FIGURES 3, 4, AND 5.). THIS TYPE OF LINER HAS BEEN CONSTRUCTED AND PROVEN TO BE A RELIABLE TECHNOLOGY IN VARIOUS CONSTRUCTION APPLICATIONS. THE DESIGN EFFORT WILL TRY TO MINIMIZE THE NUMBER OF WELLS USED WHILE MAINTAINING THE EFFECTIVENESS OF THE GROUNDWATER TREATMENT SYSTEM, BASED ON THE ADDITIONAL HYDROGEOLOGIC CHARACTERIZATION, AS NOTED PREVIOUSLY.

GROUNDWATER EXTRACTION:

THE COMMENTER SUGGESTS THAT AN INDEPTH ANALYSIS OF THE EFFECTS OF GROUNDWATER EXTRACTION BE PERFORMED.

U.S. EPA'S RESPONSE:

FURTHER HYDROGEOLOGICAL CHARACTERIZATION, AS NOTED PREVIOUSLY WILL BE REQUIRED TO FINALIZE THE DESIGN OF THE GROUNDWATER EXTRACTION SYSTEM. THIS DATA WILL BE OBTAINED DURING THE REMEDIAL DESIGN PHASE. THE 220 WELLS PROPOSED ACROSS THE WHOLE SITE ARE BASED ON THE CURRENT HYDROGEOLOGICAL INFORMATION. DUE TO THE POOR YIELD OF GROUNDWATER AND LACK OF PUMP TEST RESULTS, ADDITIONAL HYDROGEOLOGICAL DATA NEED TO BE OBTAINED IN THE PRE-DESIGN OR DESIGN PHASE. THE NUMBER, LOCATION, AND SPACING OF WELLS IS NOT TO BE INTERPRETED AS THE FINAL ESTIMATE, BUT RATHER A PRELIMINARY ESTIMATE. THE DESIGN WILL FOCUS ON A MINIMUM NUMBER OF WELLS THROUGH THE LINER THAT WILL EFFECTIVELY EXTRACT THE CONTAMINATED GROUNDWATER PLUME AND PROVIDE FOR A SOUND INTEGRATABLE STRUCTURE.

WELL CLOSURES:

THE COMMENTER RECOMMENDS CLOSING THE TIPPLE AND WATSON'S WELLS.

U.S. EPA'S RESPONSE:

THE FS NARRATIVES INDICATE THAT THE TIPPLE WELL AND THE WATSON'S WELLS SHOULD BE CLOSED DURING THE REMEDIAL ACTION. THIS WILL BE INCLUDED IN THE REMEDIAL DESIGN.

RESIDENTIAL MONITORING PROGRAM:

THE COMMENTER RECOMMENDS THAT U.S. EPA CONDUCT A RESIDENTIAL WELL SAMPLING PROGRAM FOR LOCAL GROUNDWATER SUPPLIES.

U.S. EPA'S RESPONSE:

A GROUNDWATER MONITORING PROGRAM IS INCLUDED AS PART OF THE TECHNOLOGIES THAT ADDRESS THE GROUNDWATER OPERABLE UNIT. THESE MONITORING WELLS INCLUDE EXISTING AND PROPOSED NEW WELLS THAT ARE LOCATED AROUND THE PERIMETER OF THE SITE. THESE WELLS WOULD DETECT ANY GROUNDWATER CONTAMINANT MIGRATION FROM THE SITE TOWARD RESIDENTIAL WELLS. A RESIDENTIAL WELL SAMPLING EFFORT COULD BE INITIATED AT THAT TIME IF CONTAMINATION WAS DETECTED IN THE MONITORING WELLS.

STRIP PITS AND MINE SHAFTS

THE COMMENTER RAISES THE CONCERN OF STRIP PITS AND MINE SHAFTS IN THE AREA.

U.S. EPA'S RESPONSE:

DATA COLLECTED DURING PHASE I AND II FIELD INVESTIGATIONS DID NOT DETECT THE PRESENCE OF ANY 70 FEET DEEP STRIP PITS OR OLD MINE SHAFTS AT THE SITE. THIS INFORMATION WAS PROVIDED BY A LOCAL RESIDENT RECENTLY DURING THE PUBLIC MEETING ON FEBRUARY 29, 1988. DUE TO THE POTENTIAL IMPACT THESE FEATURES COULD HAVE ON IMPLEMENTATION OF THE REMEDIAL ALTERNATIVE, THE IDENTIFICATION OF SUCH GEOLOGICAL STRUCTURES SHOULD BE CONSIDERED DURING THE REMEDIAL DESIGN DATA COLLECTION PHASE.

D. SELECTED ALTERNATIVE
RETAINED ALTERNATIVES:

THE COMMENTER IS NOT SATISFIED WITH HOW ALTERNATIVES 5 AND 8 ARE COMPARED.

U.S. EPA'S RESPONSE:

SECTION 7.3 OF THE FS PRESENTS A FURTHER COMPARISON OF ALTERNATIVES 5 AND 8. THESE ALTERNATIVES WERE RETAINED AFTER COMPARISON OF ALL ALTERNATIVES PRESENTED IN SECTION 7.1. THE DETAILED ANALYSIS OF ALL ALTERNATIVES IS PROVIDED IN CHAPTER 6 OF THE FS REPORT. ALTERNATIVES 5 AND 8 WERE SIMILAR IN COST AND COMPARABLE IN TERMS OF PROTECTIVENESS, ATTAINMENT OF APPLICABLE, RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS), REDUCTION IN TOXICITY, MOBILITY, AND VOLUME (TMV), AND TECHNICAL FEASIBILITY. RELIABILITY AND AVAILABILITY WERE MORE VARIABLE FACTORS IN DISTINGUISHING BETWEEN THE TWO ALTERNATIVES.

ELIMINATION OF IN SITU VITRIFICATION (ISV) (ALTERNATIVES 8 AND 9)

THE COMMENTER STATES THAT ISV WAS ELIMINATED BASED ON UNAVAILABILITY AND RELIABILITY.

U.S. EPA'S RESPONSE:

AVAILABILITY WAS NOT THE SOLE FACTOR FOR ELIMINATING ALTERNATIVES 8 OR 9 FROM CONSIDERATION, WHICH INCLUDED ISV AS THE PRIMARY TREATMENT TECHNOLOGY FOR SOILS. ELIMINATION WAS BASED ON AN EVALUATION OF ALL CRITERIA TO ELIMINATE OR SELECT A PREFERRED ALTERNATIVE. THE SELECTION OF A PREFERRED ALTERNATIVE IS BASED ON OVERALL SUITABILITY AND ON PROVEN EFFECTIVENESS, IMPLEMENTABILITY AND COST FACTORS.

AN EVALUATION OF RELIABILITY BETWEEN ALTERNATIVES 5 AND 98 CAN BE PERFORMED. ISV HAS NO PERFORMANCE RECORD THAT SHOWS IT IS A RELIABLE TECHNOLOGY AT HAZARDOUS WASTE SITES. ON THE OTHER HAND, INCINERATION HAS A PERFORMANCE RECORD AT WASTE SITES WHICH IN ITSELF INDICATES MORE RELIABILITY THAN ISV AS A TREATMENT TECHNOLOGY.

ON SITE SEDIMENTS IN THE EAST AND WEST BASIN.

THE COMMENTERS STATES THAT THE FS DID NOT ADDRESS CONTAMINATED ON-SITE SEDIMENTS IN THE EAST AND WEST BASINS AND THAT REMOVAL AND TREATMENT MUST BE INCLUDED IN THE FINAL REMEDIAL ACTION.

U.S. EPA'S RESPONSE.

THE WEST BASIN IS INCLUDED IN SOIL REMOVAL AREA AND WILL RESULT IN THE REMOVAL TO A DEPTH OF 2 FEET. THE RISK VALUES FOR THE EAST BASIN SEDIMENTS INDICATE THEY SHOULD BE ADDRESSED. THE VOLUME OF SEDIMENTS WILL BE CALCULATED AND INCLUDED DURING INITIAL DESIGN.

III. PRP COMMENTS
LEGAL COMMENTS

FOLLOWING ARE THE RESPONSES TO THE LEGAL COMMENTS MADE BY THE PRPS IN THEIR MARCH 21, 1988 SUBMISSION. THE PRP COMMENTERS HAVE MADE A NUMBER OF COMMENTS DIRECTED TO THE LEGAL ASPECTS OF THE RI/FS PUBLIC COMMENT PROCESS. THESE COMMENTS FALL INTO TWO GENERAL CATEGORIES:

(1) CHALLENGES TO THE "FAIRNESS" OF THE TIMING OF THE SUMMIT NATIONAL PUBLIC COMMENT PERIOD AND AVAILABILITY

OF THE ADMINISTRATIVE RECORD, AND

(2) CHALLENGES TO THE ENTIRE RI/FS PROCESS UNDER SARA, AS ADMINISTERED BY U.S. EPA. REGION V BELIEVES THAT BOTH THE PARTICULAR PROCESS OBSERVED IN THE SUMMIT NATIONAL SITUATION AND THE PROCEDURES IT FOLLOWS IN ALLOWING PUBLIC PARTICIPATION UNDER SARA ARE FULLY CONSISTENT WITH AND PROTECTIVE OF THE RIGHTS OF THE COMMENTING POTENTIALLY RESPONSIBLE PARTIES.

A. COMMENTS ON PUBLIC PARTICIPATION AND THE ADMINISTRATIVE RECORD COMMENT:

THE PRPS CLAIM THAT THE PUBLIC COMMENT PERIOD WAS TOO SHORT, AND THAT THEY WERE NOT PROVIDED WITH TIMELY ACCESS TO THE ADMINISTRATIVE RECORD.

U.S. EPA'S RESPONSE:

THE ORIGINALLY IDENTIFIED PRPS WERE AFFORDED AN OPPORTUNITY TO PERFORM THE RI AND FS, AT A SERIES OF MEETINGS HELD IN JUNE AND JULY, 1982. THEY DECLINED TO DO SO, AND U.S. EPA PROCEEDED TO UNDERTAKE THE RI STUDIES. U.S. EPA'S CONSISTENT POLICY WITH RESPECT TO ITS RI WORK HAS BEEN TO SHARE ONLY THE FINAL DOCUMENT WITH THE PUBLIC, ALONG WITH DOCUMENTATION IN THE ADMINISTRATIVE RECORD THAT SHOWS THE INFORMATION CONSIDERED OR RELIED ON BY U.S. EPA. THE FINAL RI WAS NOT, IN FACT, AVAILABLE UNTIL THE DATE ON WHICH IT WAS MADE PUBLIC. THE CONCLUSION OF THE RI/FS PROCESS WAS DELAYED BY PERIODS IN WHICH FUNDS TO CONTINUE THE WORK WERE NOT AVAILABLE DUE TO LACK OF APPROPRIATIONS. U.S. EPA IS NOT AWARE WHO "LED" PRPS TO BELIEVE THE RI WAS CONCLUDED AND FINAL IN MID-1987 (COMMENTS AT 12). U.S. EPA DID NOT LEAD THE PRPS TO THIS CONCLUSION. IN ANY EVENT, THE PRPS RECEIVED THEIR STATUTORILY MANDATED OPPORTUNITY TO REVIEW AND COMMENT ON THE RI AND FS, INCLUDING ACCESS TO THE ADMINISTRATIVE RECORD, WITH MINOR EXCEPTIONS OF A VERY FEW DOCUMENTS WHOSE CONTENTS WERE REFLECTED IN THE RI ITSELF.

ON PAGE 9, IN FOOTNOTE 1, THE PRP COMMENTERS RAISE CLAIMS THAT "30 NEW PRPS" WERE IDENTIFIED BY U.S. EPA. U.S. EPA BELIEVES ALL IDENTIFIED PRPS AND THE REST OF THE PUBLIC HAVE RECEIVED NOTICE OF U.S. EPA'S VIEW OF THEIR STATUS AND THE AVAILABILITY OF THE RI, FS, AND ADMINISTRATIVE RECORD. U.S. EPA'S OBLIGATION IS TO PROVIDE NOTICE OF THE DOCUMENTS' AVAILABILITY AND AN OPPORTUNITY TO REVIEW THE DOCUMENTS. AS A COURTESY, U.S. EPA PROVIDED A NUMBER OF COPIES OF THE RI AND FS DIRECTLY TO COUNSEL FOR CERTAIN PRPS, WITH THE UNDERSTANDING THAT SAID COUNSEL WOULD DISTRIBUTE THEM FURTHER. U.S. EPA BELIEVES IT HAS MET ITS OBLIGATION UNDER SARA AND THE NCP.

THE PUBLIC COMMENT PERIOD WAS NOT, AS ASSERTED IN THE COMMENTS, ONLY 23 DAYS. THE RI AND FS WERE ORIGINALLY MADE AVAILABLE ON FEBRUARY 12, NOT FEBRUARY 17, 1988 AS THE PRPS ASSERT. U.S. EPA ALSO EXTENDED THE COMMENT PERIOD FROM MARCH 11 TO MARCH 21, 1988. U.S. EPA BELIEVES THE GUIDELINES SET FORTH IN THE PRESENT NCP {40 CFR 300.67(D)} PROVIDE ADEQUATE COMMENT TIME IN LIGHT OF THE COMPETING INTERESTS RESOLVED BY THE CLEANUP PROCESS OUTLINED IN SECTION 104 OF SARA AND IN THE NCP. THE PRPS' BARE REFERENCE TO DOCUMENTS THAT WERE NOT INCLUDED IN THE RECORD IN NO WAY IDENTIFIES HOW THESE DOCUMENTS WERE OR ARE SOMEHOW ESSENTIAL TO U.S. EPA'S DETERMINATION OF A REMEDY OR TO THE PRPS' REVIEW OF THAT DETERMINATION. IT IS WORTH NOTING THAT WHILE THE U.S. EPA DID NOT DELIVER THE ENTIRE ADMINISTRATIVE RECORD TO THE PUBLIC REPOSITORY REQUIRED TO BE ESTABLISHED UNDER SARA UNTIL FEBRUARY 29, 1988, NO PRP, DESPITE PUBLICATION OF THE RECORD'S INTENDED LOCATION THERE AND ITS CLEAR AVAILABILITY IN CHICAGO (WHERE IT WAS AVAILABLE BEGINNING ON FEBRUARY 12, 1988), MADE ANY EFFORT TO SEE OR REFER TO THE ESTABLISHMENT OF A "NEUTRAL DECISION-MAKER," TO PROVIDE MINIMAL DUE PROCESS. U.S. EPA DISAGREES WITH THE PRP READING OF HARDAGE, WHICH WAS A PRE-SARA ACTION UNDER SECTION 106 OF CERCLA SEEKING AN INJUNCTION REQUIRING PRPS TO PERFORM A CLEANUP. HARDAGE HOLDS ONLY THAT WHEN EPA SEEKS INJUNCTIVE RELIEF, IT SUBJECTS ITSELF TO THE EQUITABLE POWERS OF THE COURT, WHICH ALLOWS THE COURT, DESPITE THE SARA SCOPE-OF-REVIEW PROVISIONS IN 113(J), TO MAKE A DE NOVO DETERMINATION OF THE APPLICABLE REMEDY.

NO 106 RELIEF HAS BEEN SOUGHT HERE, NOR HAS U.S. EPA SOUGHT ACCESS TO THE COURTS IN CONNECTION WITH THIS FACILITY. COURTS GENERALLY HAVE RECOGNIZED, AND CONGRESS HAS DETERMINED, THAT NO PRE-ENFORCEMENT REVIEW OF U.S. EPA REMEDIAL DECISIONS IS AVAILABLE. THE PRPS HAVE BEEN GIVEN NOTICE OF U.S. EPA'S PROCESS AND AN OPPORTUNITY TO COMMENT.

THAT IS ALL THE PROCESS DUE FOR THIS STAGE OF THE PROCEEDINGS. THE PRPS ARE GIVEN AN OPPORTUNITY TO CHALLENGE U.S. EPA'S DECISION AT THE STAGE WHERE U.S. EPA UNDERTAKES ENFORCEMENT ACTION. THE PRP COMMENTS

WILL BE EVALUATED AND RESPONDED TO IN THE COURSE OF DEVELOPING THE RECORD OF DECISION FOR THIS FACILITY.

U.S. EPA BELIEVES IT APPROPRIATE TO DIRECT THE PRP'S ATTENTION TO U.S. VS. ROHM & HAAS CO., INC., 669 F.SUP. 672 (D.N.J. 1987). THE COURT DISTINGUISHED AND DISAGREED WITH HARDAGE, AND MADE THE FOLLOWING OBSERVATIONS:

WHILE WE AGREE THAT DEFENDANTS MUST BE AFFORDED SOME KIND OF A HEARING PRIOR TO THE ASSESSMENT OF COSTS AGAINST THEM, WE DO NOT BELIEVE THAT THEY ARE CONSTITUTIONALLY ENTITLED TO THE FULL, TRIAL-TYPE HEARING THAT THEY SEEK. THE FLAW IN DEFENDANTS' ARGUMENT IS THAT IT ASSUMES THAT DUE PROCESS REQUIRES A COMPLETE ADJUDICATORY HEARING, WITH CROSS-EXAMINATION, ON THE ISSUE OF THE PROPRIETY OF THE RESPONSE ACTION. SARA ITSELF CONTEMPLATES A LIMITED PAPER HEARING BEFORE THE AGENCY, PRESCRIBING THAT "{T}HE DEVELOPMENT OF AN ADMINISTRATIVE RECORD AND THE SELECTION OF RESPONSE ACTION UNDER THIS ACT SHALL NOT INCLUDE AN ADJUDICATORY HEARING." 113(K)(2)(C) OF SARA, 42 U.S.C. 9613(K)(2)(C). MOREOVER, IN LONE PINE STEERING COMMITTEE V. EPA, 777 F.2D 882 (3D CIR. 1982), CERT. DENIED, ... THE THIRD CIRCUIT SUGGESTED THAT DUE PROCESS WOULD BE SATISFIED WITH A LIMITED AGENCY HEARING. THE THIRD CIRCUIT REJECTED THE PLAINTIFFS' ARGUMENT THAT DUE PROCESS REQUIRED PRE-ENFORCEMENT REVIEW, HOLDING INSTEAD THAT THE 107 REIMBURSEMENT HEARING ADEQUATELY PROTECTED THE PLAINTIFFS' RIGHTS.

IN DETERMINING THE PROCESS THAT IS CONSTITUTIONALLY DUE IN A PARTICULAR CASE, A COURT MUST BALANCE THREE FACTORS: (1) THE PRIVATE INTEREST AT STAKE; (2) THE RISK OF ERRONEOUS DEPRIVATION OF THAT INTEREST THROUGH THE PROCEDURES USED AND THE PROBABLE VALUE, IF ANY, OF ADDITIONAL SAFEGUARDS; AND (3) THE GOVERNMENT'S INTEREST, INCLUDING THE BURDENS THAT ADDITIONAL PROCEDURAL REQUIREMENTS WOULD ENTAIL. MATTHEWS V. ELDRIDGE, 424 U.S. 319, 335 (1976). APPLYING THESE PRINCIPLES TO THE PRESENT CASE, WE CONCLUDE THAT THE INFORMAL HEARING ENVISIONED IN SARA AND IMPLICITLY ENDORSED IN THE LONE PINE CASE IS SUFFICIENT TO SATISFY THE REQUIREMENTS OF DUE PROCESS.

FIRST, WE RECOGNIZE THE IMPORTANT FINANCIAL INTEREST THAT POTENTIALLY RESPONSIBLE PARTIES HAVE IN THE SELECTION OF A RESPONSE ACTION, PARTICULARLY WHERE THE LIABILITY COULD AMOUNT TO MILLIONS OF DOLLARS. HOWEVER, THERE IS AN OVERWHELMING COUNTERVAILING PUBLIC INTEREST, AS EVINCED IN CERCLA, IN EFFECTING THE EXPEDITIOUS CLEAN-UP OF POTENTIALLY HEALTH AND LIFE THREATENING HAZARDOUS WASTE SITES. THE IMPOSITION OF LONG, DRAWN-OUT, AND COSTLY TRIAL TYPE PROCEDURES, EITHER AT THE AGENCY LEVEL OR IN A DE NOVO PROCEEDING IN DISTRICT COURT, COULD GREATLY HINDER THIS EFFORT. MOREOVER, WE ARE UNCONVINCED THAT FORMAL TRIAL-TYPE HEARINGS WOULD ADVANCE THE DEFENDANTS' INTERESTS INACCURACY OR EQUITY.

WITH RESPECT TO THIS FINAL ISSUE, IT IS IMPORTANT TO EMPHASIZE THE NATURE OF THE AGENCY DECISION MAKING AT ISSUE HERE. THE AGENCY'S DETERMINATION OF AN APPROPRIATE RESPONSE ACTION INVOLVES INSPECTIONS AND TESTING AIMED AT DISCOVERING THE TYPES OF WASTE PRESENT AT A SITE AND THE EXTENT OF THE HAZARD, AND TECHNICAL INVESTIGATIONS TO DEVELOP AN APPROPRIATE SOLUTION TO THE PROBLEM. CONGRESS VESTED A CERTAIN AMOUNT OF DISCRETION IN THE U.S. EPA IN ITS CHOICE OF A RESPONSE ACTION, REQUIRING ONLY THAT THE COSTS FOR WHICH IT SEEKS REIMBURSEMENT BE NOT INCONSISTENT WITH THE NCP. THE ULTIMATE SELECTION OF A RESPONSE ACTION DEPENDS UPON A BALANCING, BY THE AGENCY, OF A NUMBER OF FACTORS, INCLUDING COST, TECHNOLOGY, RELIABILITY, AND PUBLIC HEALTH, WELFARE AND ENVIRONMENTAL EFFECTS. SEE 40 CFR 300.68. THUS, THE U.S. EPA'S DECISION-MAKING PROCESS AT ISSUE HERE NEED NOT INVOLVE A RECONSTRUCTION OF PAST EVENTS THROUGH EYEWITNESS TESTIMONY AND CREDIBILITY JUDGMENTS, AS WOULD BE NECESSARY WHERE, FOR EXAMPLE, A LIABILITY DETERMINATION WAS BEING MADE. RATHER, THE PROCESS INVOLVES THE EVALUATION OF NUMEROUS EXPERT REPORTS AND TECHNICAL DATA. AS A RESULT, THE FOCUS FOR PURPOSES OF DUE PROCESS ANALYSIS SHOULD BE ON WHETHER INTERESTED PARTIES HAVE AN OPPORTUNITY TO PARTICIPATE IN THE DEVELOPMENT OF SUCH INFORMATION AND TECHNICAL DATA BEFORE THE AGENCY.

UNDER THESE CIRCUMSTANCES, WHERE THE PARTIES ARE ALLOWED TO COMMENT ON THE AGENCY'S PROPOSALS AND TO SUBMIT REPORTS OF THEIR OWN EXPERTS, THE QUALITY OF THE INITIAL DECISION-MAKING PROCESS WOULD NOT BE GREATLY ENHANCED BY THE PRESENTATION OF LIVE TESTIMONY OR THE USE OF CROSS-EXAMINATION.

MOREOVER, WE BELIEVE THAT AN ADMINISTRATIVE RECORD BUILT ON SUCH AN EXCHANGE OF OPINIONS AND COMMENTS BY EXPERTS AND INFORMED CITIZENS AND CONTAINING AN EXPLANATION BY THE AGENCY OF ITS REASONS FOR ACCEPTING OR REJECTING THE VARIOUS PROPOSALS, PROVIDES AN ADEQUATE BASIS FOR SUBSEQUENT JUDICIAL REVIEW. UNDER SUCH CIRCUMSTANCES, THE ADMINISTRATIVE RECORD HAS NOT "BEEN CREATED ALMOST ENTIRELY BY THE U.S. EPA....{WITH} VIRTUALLY NO EVIDENCE THAT MIGHT EXCULPATE" THE DEFENDANTS. RATHER, IT REFLECTS THE CONTEMPORANEOUS ANALYSES AND CRITICISMS OF ALL INTERESTED PARTIES, AND THEREFORE PROVIDES A COMPREHENSIVE FRAMEWORK FROM WHICH THE

COURT CAN SCRUTINIZE THE AGENCY'S ACTION.

FOR ALL OF THESE REASONS, WE CONCLUDE THAT SARA'S INFORMAL AGENCY HEARING PROCEDURES, AND DEFERENTIAL STANDARD OF JUDICIAL REVIEW SATISFY THE REQUIREMENTS OF DUE PROCESS. U.S. V. ROHM & HAAS CO., INC., ID. AT 679-81.

THIS EXTENSIVE QUOTATION, WHICH INCLUDES THE LANGUAGE EXTRACTED FROM ITS CONTEXT IN THE PRP'S CITE AT P. 20 OF THEIR COMMENTS, CLEARLY SUPPORTS THE PROCESS U.S. EPA HAS AND WILL FOLLOW HERE. THE PRPS ARE NOT ENTITLED TO, AND WILL NOT BE GIVEN, A TRIAL-TYPE PROCEEDING AT THIS STAGE IN THE PROCESS. THEY ARE PROVIDED BY SARA WITH AN OPPORTUNITY TO REVIEW THE RI AND FS, AND THE BALANCE OF U.S. EPA'S RECORD, AND TO MAKE COMMENTS ON THE REMEDY IDENTIFIED BY U.S. EPA. THEY HAVE NOW AVAILED THEMSELVES OF THAT OPPORTUNITY. THEIR COMMENTS WILL BE CONSIDERED AND RESPONDED TO BY U.S. EPA, AND INCORPORATED INTO THE ADMINISTRATIVE RECORD. THEIR COMMENTS MAY AFFECT THE REMEDIAL SELECTION PROCESS WHICH CULMINATES IN U.S. EPA'S RECORD OF DECISION. SHOULD THE U.S. EPA NOT BE ABLE TO NEGOTIATE A PRP PERFORMED CLEANUP, POST-ROD, THE PRPS WILL BE AT LIBERTY TO RAISE ISSUES BY WAY OF DEFENSE AND REQUEST A REVIEW OF U.S. EPA'S REMEDIAL DECISION IN ANY ACTION BROUGHT UNDER SECTION 106 AND 107 OF SARA.

TECHNICAL COMMENTS:

THE FOLLOWING SECTION PROVIDES RESPONSES TO TECHNICAL ISSUES RAISED BY THE PRPS AND PRESENTED TO THE U.S. EPA IN THE SUMMIT NATIONAL PRP GROUP REPORT DATED MARCH 11, 1988. THEIR DETAILED ANALYSIS OF THE TECHNICAL ISSUES ARE PRESENTED PRIMARILY IN ATTACHMENT E WHICH IS THE CONESTOGA-ROVERS ASSOCIATES (CRA) REPORT. U.S. EPA'S RESPONSE WILL BE FOCUSED ON SPECIFIC TECHNICAL COMMENTS PRESENTED IN ATTACHMENT E IN AN ATTEMPT TO AVOID FOR REPETITION OF COMMENTS. A COMPARISON OF COMMENTS PRESENTED IN THE MAIN REPORT WAS MADE TO INSURE ALL ISSUES WHERE ADDRESSED IN THE CRA REPORT.

ATTACHMENT E - CONESTOGA-ROVER ASSOCIATES (CRA) REPORT COMMENTS AND RESPONSES MARCH 1988

THE RESPONSES TO THE CRA REPORT ARE GROUPED INTO SEVERAL CATEGORIES. THE EXECUTIVE SUMMARY IS BROKEN INTO COMMENTS CONCERNING THE RI AND FS REPORTS AND THEN PRESENTS THE PRP GROUP'S PROPOSED ALTERNATIVE. EACH OF THESE SECTIONS WILL BE ADDRESSED SEPARATELY. FOLLOWING RESPONSES TO THE EXECUTIVE SUMMARY, A COMMENT BY COMMENT DISCUSSION OF ISSUES NOT ALREADY DISCUSSED WILL BE PERFORMED.

EXECUTIVE SUMMARY

A. REMEDIAL INVESTIGATION:

COMMENT (I):

THE PRPS CLAIM THAT U.S. EPA DID NOT PROVIDE SUPPORTING DOCUMENTS AND DATA NECESSARY FOR A COMPLETE AND COMPREHENSIVE REVIEW OF THE RI/FS.

U.S. EPA'S RESPONSE (I):

ALL DATA COLLECTED DURING BOTH PHASES OF THE RI IS PRESENTED IN THE FINAL RI REPORT, BOTH IN VOLUMES I AND II. THESE DATA ARE AGAIN SUMMARIZED IN THE FS. ALL SUPPORTING DOCUMENTATION IS AVAILABLE IN THE ADMINISTRATIVE RECORD LOCATED AT THE DEERFIELD, OHIO POST OFFICE AND U.S. EPA'S REGIONAL OFFICE IN CHICAGO. THERE ARE NO EXISTING DATA MISSING THAT WERE USED IN THE PREPARATION OF THE RI OR FS REPORTS.

COMMENT (II):

THE PRPS CLAIM THAT U.S. EPA DID NOT PERFORM ITS QA/QC DATA VALIDATION PROCEDURES PROPERLY.

U.S. EPA'S RESPONSE (II):

ALL ANALYTICAL DATA COLLECTED DURING THE RI WERE REVIEWED IN ACCORDANCE WITH U.S. EPA QUALITY ASSURANCE PROTOCOLS IN PLACE AT THAT TIME. THESE GUIDELINES ARE PRESENTED IN APPENDIX B OF THE RI REPORT VOLUME II. THE VALID DATA ARE PRESENTED IN SUMMARY TABLES IN APPENDIX A OF THE RI REPORT VOLUME II. THE QA/QC

ASSESSMENT PROCEDURES ARE DISCUSSED IN SECTION 4.1 OF THE RI REPORT VOLUME I. A SUMMARY OF THE ANALYTICAL PROBLEMS IS PRESENTED IN TABLES 4.2 AND 4.3. BASED ON THESE PROBLEMS, THE DATA WERE EITHER OMITTED FROM SUMMARY TABLES OR PROPER QUALIFIERS WERE ADDED. THEREFORE, FOLLOWING THE ABOVE GUIDELINES, U.S. EPA HAS PROPERLY IDENTIFIED THOSE CONTAMINANTS THAT ARE NOT ATTRIBUTABLE TO THE SUMMIT NATIONAL SITE.

COMMENT (III):

ACCORDING TO THE PRPS, IMPROPER WELL LOCATIONS AND DEPTHS RESULTED IN MISLEADING HYDRAULIC CONDUCTIVITY DATA.

U.S. EPA'S RESPONSE (III):

THE SELECTION AND DEPTH OF WELL LOCATIONS DURING PHASE I OF THE RI WAS BASED ON AVAILABLE DATA AT THAT TIME. THE PHASE II MONITORING WELL INSTALLATION PROGRAM AND GROUNDWATER INVESTIGATION ACTIVITY WERE BASED ON DATA COLLECTED FROM PHASE I. THIS PROVIDED MORE ACCURATE INFORMATION ON THE HYDROGEOLOGICAL CHARACTERISTICS OF THE SITE. A PUMP TEST WAS CONSIDERED. HOWEVER, THE YIELD OF THE WELLS DID NOT INDICATE THAT ANY RELIABLE DATA COULD BE OBTAINED DUE TO THE LOW PUMPING RATE OF LESS THAN 1 GAL/MIN. THAT COULD BE SUSTAINED. MANY OF THE MONITORING WELLS WERE HAND BAILED DRY WHILE PURGING PRIOR TO SAMPLE COLLECTION.

COMMENT (IV):

THE PRPS CLAIM THAT CHARACTERIZATION OF THE INTERMEDIATE AQUIFER WAS PERFORMED INCORRECTLY.

U.S. EPA'S RESPONSE (IV):

DUE TO THE COMPLEX GEOLOGY AT THE SITE, THE INITIAL SEPARATION OF GEOLOGICALLY SIMILAR UNITS BASED ON LITHOLOGY LED TO THE IDENTIFICATION OF THREE PRIMARY UNITS FOR THE PURPOSE OF THE RI ANALYSIS. THE INTERMEDIATE UNIT WAS LATER SEPARATED INTO THE UPPER AND LOWER UNITS AND A DISCUSSION OF EACH WAS PERFORMED.

COMMENT (V):

THE PRPS CLAIM THAT THE DATA FOR ON-SITE AND OFF-SITE SOILS WAS BIASED AND CONTAMINATION LEVELS WERE OVER-ESTIMATED.

U.S. EPA'S RESPONSE (V):

SOIL SAMPLES WITH THE HIGHEST CONCENTRATIONS FOR VOLATILE ORGANIC ANALYZERS (VOAS), AND BASE NEUTRAL ACIDS (BNAS) SCREENING INDICATOR COMPOUNDS WERE SELECTED BECAUSE THE PURPOSE OF THE RI INVESTIGATION IS TO DEFINE THE NATURE AND EXTENT OF CONTAMINATION. SOME UNCONTAMINATED SAMPLES WERE SENT TO THE CONTRACT LAB PROGRAM (CLP) FOR ANALYSIS TO CONFIRM THE ACCURACY OF THE SCREENING PROGRAM. THE OBJECTIVE OF SELECTING SAMPLES FOR ANALYSIS IS TO CHOOSE THOSE THAT POSE A CONCERN AND WARRANT REMEDIATION. UNCONTAMINATED SAMPLES ARE NOT A CONCERN. IF THE SAMPLING WAS CONDUCTED IN THE MANNER PROPOSED BY THE COMMENTERS, THE CONCLUSIONS DEVELOPED WOULD IGNORE THE EXISTING CONTAMINATION PROBLEM. IN ADDITION, THE RI SAMPLING PROGRAM USED COVERS THE OVERALL SITE AND PROVIDES DATA TO ASSESS AVERAGE RISKS AS WELL AS AREA SPECIFIC RISKS (SEE APPENDIX A OF THE FS REPORT).

COMMENT (VI):

ACCORDING TO THE PRPS, THE RI HAS FAILED TO ADDRESS THE PRESENCE AND SOURCE OF BACKGROUND SOIL CONTAMINATION.

U.S. EPA'S RESPONSE (VI):

THE NORTHERN EDGE OF THE CEMENT PLANT WAS IMPACTED BY THE SUMMIT NATIONAL SITE DURING ACTIVE SITE OPERATIONS. THIS IS BASED ON THE FACT THAT THIS PORTION RECEIVED DIRECT DRAINAGE FROM THE SITE PRIOR TO REROUTING THE SOUTHERN DITCH AND IS SUPPORTED BY THE ANALYTICAL DATA GATHERED DURING THE RI. THE RI ADDRESSED THE PRESENCE OF CONTAMINANTS IN BACKGROUND SOILS. AN EVALUATION OF BACKGROUND SOIL DATA WAS PERFORMED TO DETERMINE IF CERTAIN COMPOUNDS WERE SITE-RELATED, NATURALLY OCCURRING, OR FROM OTHER SOURCES. THIS ASSESSMENT OF BACKGROUND SOILS IS PRESENTED IN SECTION 4.4.3.1 OF THE RI REPORT. THE PRESENCE OF CONTAMINANTS DUE TO OTHER

SOURCES IS CONSIDERED, BUT THE POSITIVE IDENTIFICATION OF OTHER SOURCES IS NOT PART OF THE SUMMIT NATIONAL SITE INVESTIGATION. OTHER POTENTIAL SOURCES MENTIONED IN THE RI DO NOT INDICATE THAT CONTAMINATION ASSOCIATED WITH THE SUMMIT NATIONAL SITE ORIGINATED FROM OTHER SOURCES.

COMMENT (VII):

THE PRPS STATE THAT THE PRESENTATION OF ON-SITE SOIL DATA IS MISLEADING.

U.S. EPA'S RESPONSE (VII):

THE PRESENTATION OF ON-SITE SOIL DATA MAY HAVE CONFUSED THE COMMENTERS, BUT IT IS NOT MISLEADING. SOIL DATA WERE PRESENTED IN CHAPTER 4 OF THE RI REPORT, WITH THE PURPOSE OF DEFINING THE NATURE AND EXTENT OF CONTAMINATION IN SOILS. PRESENTATION OF THESE DATA IN THE FORM OF MASS OF CONTAMINANTS WAS CONSIDERED BUT NOT USED. THE PRESENTATION OF DATA USED IN CHAPTER 4 IS NOT FOR ASSESSMENT OF RISK.

NEITHER IS MASS OF CONTAMINATION NECESSARILY INDICATIVE OF HEALTH RISKS. REMEDIATION IS BASED ON RISK REDUCTION WHICH IS BASED ON HEALTH RISKS IDENTIFIED IN THE PUBLIC HEALTH EVALUATION (PHE).

COMMENT (VIII):

ACCORDING TO THE PRPS, THE RI DOES NOT ADDRESS THE POTENTIAL IMPACT TO SURFACE WATER IN THE SOUTHERN DITCH FROM OFF-SITE CONTAMINANTS IN THE CEMENT PLANT YARD.

U.S. EPA'S RESPONSE (VIII):

SURFACE WATER FLOW IN THESE DITCHES OCCURS ONLY IN RESPONSE TO PRECIPITATION OR DISCHARGE FROM THE EAST POND. LABORATORY RESULTS INDICATE THE PRESENCE OF CONTAMINATION IN SURFACE WATER. THE NORTHERN EDGE OF THE CEMENT PLANT PROPERTY THAT CONTRIBUTED RUNOFF TO THE SOUTHERN DITCH WAS AFFECTED BY PREVIOUS SITE ACTIVITIES AS DISCUSSED PREVIOUSLY. THEREFORE, THE SOURCE OF THE CONTAMINANTS IN THE SOUTHERN DITCH CAN BE CONNECTED TO THE SITE DIRECTLY OR INDIRECTLY DUE TO THE SITE'S EFFECT ON THE CEMENT PLANT SOILS.

COMMENT (IX):

THE PRPS CLAIM THAT BACKGROUND SEDIMENT SAMPLES WERE NOT COLLECTED DURING THE RI.

U.S. EPA'S RESPONSE (IX):

THE FURTHEST UPSTREAM SEDIMENTS SAMPLING LOCATION DOES NOT HAVE THE HIGHEST LEVEL OF CONTAMINANTS AS THE COMMENTER STATES (SEE RI TABLES 4-45 THROUGH 4-47). BACKGROUND SEDIMENT SAMPLES WERE OBTAINED FROM AN UPSTREAM LOCATION NOT AFFECTED BY SITE ACTIVITY. IN ADDITION, THE SEDIMENT SAMPLES WERE ALSO COMPARED TO BACKGROUND SOIL SAMPLES, SINCE THESE SOILS MAY HAVE ACTED AS A SOURCE FOR BACKGROUND SEDIMENT CHARACTERISTICS. BOTH COMPARISONS INDICATE SITE RELATED CONTAMINATION LEVELS ABOVE BACKGROUND SOILS AND SEDIMENTS FOR BOTH ON-SITE AND DOWNSTREAM SEDIMENTS.

COMMENT (X):

THE PRPS STATE THAT THE INVESTIGATION USED TO IDENTIFY THE LOCATION AND QUANTITY OF SUBSURFACE WASTE WAS INADEQUATE.

U.S. EPA'S RESPONSE (X):

ALL MAGNETIC ANOMALIES IDENTIFIED DURING THE MAGNETOMETER SURVEY WERE INVESTIGATED THROUGH TEST PIT EXCAVATIONS. THESE TEST PIT EXCAVATIONS EXPOSED THE BURIED DRUMS AND ALLOWED FOR VISUAL ESTIMATES OF NUMBERS AND ORIENTATION OF BURIED DRUMS. IN ADDITION TO SUBSURFACE EXPLORATION THROUGH TEST PITS, THE 32 SOIL BORINGS ACROSS THE SITE DID NOT ENCOUNTER ANY BURIED DRUMS OUTSIDE THE MAGNETIC ANOMALOUS AREAS. A DRUM INVESTIGATION THROUGH PARALLEL TRENCHES IS VERY EXTENSIVE AND BETTER SUITED FOR A REMEDIAL DESIGN DATA COLLECTION EFFORT.

COMMENT (XI):

ACCORDING TO THE PRPS, THE RI FAILS TO DETERMINE OR ESTIMATE THE ULTIMATE FATE OF GROUNDWATER CONTAMINANTS.

U.S. EPA'S RESPONSE (XI):

A DELINEATION OF THE GROUNDWATER PLUME IN THE WATER TABLE AND UPPER INTERMEDIATE WELLS IS PRESENTED IN FIGURES 4-13 THROUGH 4-16, 4-18 AND 4-19. THE POTENTIAL FOR GROUNDWATER CONTAMINANT MIGRATION IS PRESENTED ON TABLES 4-9 THROUGH 4-11 WHICH PREDICT CONCENTRATIONS AT POINTS 100 FT., 1450 FT., AND 4500 FT. DOWN-GRADIENT OF THE SITE. BASED ON THE ABOVE, BOTH THE PLUME AND ULTIMATE PALE OF GROUNDWATER CONTAMINATION HAS BEEN DEFINED.

COMMENT (XII):

THE PRPS CLAIM THAT THE PUBLIC HEALTH EVALUATION (PHE) ASSUMES A WORST CASE SCENARIO WHICH LEADS TO A GREAT OVERSTATEMENT OF PRESENT AND FUTURE RISK.

U.S. EPA'S RESPONSE (XII):

THE PHE DOES ASSUME THE WORST CASE EXPOSURE SCENARIO BASED ON THE MAXIMUM CONCENTRATION. HOWEVER, THE PHE ALSO EVALUATES THE RISK ASSOCIATED WITH AVERAGE CONCENTRATION OF CONTAMINANTS. BOTH ANALYSES ASSUME THE NO-ACTION ALTERNATIVE AS REQUIRED BY THE PHE GUIDELINES.

COMMENT (XIII):

ACCORDING TO THE PRPS, THE PHE INCORRECTLY QUANTIFIES CARCINOGENIC RISK CAUSED BY POLYNUCLEAR CHLORINATED HYDROCARBONS (PAHS) ON THE BASIS OF THE TOTAL OF ALL PAHS.

U.S. EPA'S RESPONSE (XIII):

CARCINOGENIC RISKS ASSOCIATED WITH PAHS ARE BASED ON ONLY THOSE PAHS CONSIDERED TO BE CARCINOGENS.

COMMENT (XIV):

THE PRPS CLAIM THAT RISKS FROM BACKGROUND SOILS ARE NOT SIGNIFICANTLY DIFFERENT AND IN SOME CASES GREATER THAN RISKS POSED BY THE SITE.

U.S. EPA'S RESPONSE (XIV):

THE TOTAL CANCER RISK ASSOCIATED WITH INCIDENTAL INGESTION OF BACKGROUND SOILS OVER A LIFETIME EXCEEDS 10^{-6} FOR A PLAUSIBLE MAXIMUM EXPOSURE AND IS EQUAL TO 10^{-6} FOR THE AVERAGE EXPOSURE SCENARIO. THE FUTURE RESIDENTIAL SCENARIO FOR EXPOSURE TO ON-SITE SOILS RESULTS IN AVERAGE RISKS OF 1×10^{-5} AND PLAUSIBLE MAXIMUM RISK OF 5×10^{-3} . BOTH VALUES ARE AT LEAST ONE ORDER OF MAGNITUDE HIGHER FOR ON-SITE SOILS THAN BACKGROUND SOILS.

B. FEASIBILITY STUDY:

COMMENTS (1):

THE PRPS BELIEVE THAT THE EXTENSION OF THE SITE BOUNDARY IS UNNECESSARY.

U.S. EPA'S RESPONSE (I):

THE EXTENSION OF THE SITE BOUNDARY IS NOT BASED SOLELY ON SOIL CONTAMINATION, BUT ALSO CONCERNS REGARDING THE OFF-SITE EXTENT OF GROUNDWATER CONTAMINATION AND CONTAMINATED OFF-SITE SEDIMENTS. THE SLURRY WALL AND THE RELOCATING OF THE SOUTHERN DRAINAGE DITCH MUST BE CONSTRUCTED BEYOND THE AREA OF CONTAMINATION. IN CONCLUSION, ADJACENT OFFSITE PROPERTIES ARE REQUIRED FOR IMPLEMENTATION OF THE REMEDIAL ACTION.

COMMENTS (II):

THE PRPS PROPOSE THAT A PERMEABLE SOIL COVER SHOULD BE INSTALLED INSTEAD OF A RCRA CAP.

U.S. EPA'S RESPONSE (II):

THERE ARE NO AVAILABLE DATA TO INDICATE THAT FLUSHING OF THE CONTAMINATED SUBSURFACE SOILS WOULD LEAD TO THEIR CLEANUP. INFILTRATION THROUGH THE PERMEABLE SOIL COVER PROPOSED BY THE COMMENTERS WOULD BE COUNTER-PRODUCTIVE TO THE GROUNDWATER EXTRACTION AND GRADIENT CONTROL SYSTEM AS OUTLINED IN THE RECOMMENDED ALTERNATIVE. IN ADDITION, THE SOIL COVER DOES NOT PROPERLY CONTAIN HAZARDOUS MATERIALS FROM BECOMING EXPOSED DUE TO FREEZE AND THAW CYCLES WHICH CAN CAUSE CRACKING.

COMMENT (III):

THE PRPS BELIEVE THAT THE FS HAS ERRED IN ITS EVALUATION BY CONSIDERING SUBSURFACE SOILS TO BE AVAILABLE FOR HUMAN CONTACT AND INCIDENTAL INGESTION.

U.S. EPA'S RESPONSE (III):

THE RISK NUMBERS ESTIMATED FOR SUBSURFACE SOIL BLOCKS WERE USED AS A MECHANISM TO SELECT SOIL BLOCKS TO BE INCLUDED IN THE "HOT SPOT" SOIL REMOVAL SCENARIO, AND NOT TO DEFINE THE RISK OF THE SITE. THE RISK ASSOCIATED WITH SOILS WAS BASED ON SURFACE SOIL BLOCKS UNITS. THE RISKS ESTIMATED FOR SOIL BLOCKS AT 2 FT. DEPTH INTERVALS FROM 2-8 FT. WERE NOT THE ONLY CRITERIA USED TO SELECT "HOT SPOT" SOILS. PAST SITE ACTIVITIES, DISTURBED VERSUS UNDISTURBED SOILS, AND HANDLING DURING EXCAVATION WERE ALSO CONSIDERED. THE DELINEATION OF "HOT SPOT" SOILS REPRESENT THE MOST COST EFFECTIVE AND PRACTICAL REMOVAL SCENARIO. THE RISK NUMBERS USED IN THE PHE REPRESENT RISK PRESENTED BY THE ENTIRE SITE BASED ON SURFACE SOILS WHICH ARE AVAILABLE FOR HUMAN CONTACT AND INCIDENTAL INGESTION.

COMMENT (IV):

ACCORDING TO THE PRPS, THE FS IS INCONSISTENT AND ARBITRARY IN THAT THE NEED FOR SURFACE CONTROL IS NOT EVALUATED ON THE SAME BASIS AS THE NEED FOR SOIL REMOVAL.

U.S. EPA'S RESPONSE (IV):

RISKS GREATER THAN 10^{-6} ARE SPREAD THROUGHOUT THE SITE, THEREFORE WARRANTING REMEDIAL ACTION TO PROTECT AGAINST EXPOSURE TO UNACCEPTABLE RISKS. RISKS GREATER THAN 10^{-6} ARE ESTIMATED FOR ABOUT 54% OF THE CELLS THAT RANGE BETWEEN DEPTHS OF 0 TO 2 FT., AND ABOUT 48% IN CELLS THAT RANGE IN DEPTHS BETWEEN 6 TO 8 FT. IF WE LOOK AT SOIL CELLS AS COLUMNS RANGING FROM 0 TO 8 FT., ABOUT 30% WOULD EXHIBIT RISKS GREATER THAN 10^{-6} AND THIS IS SPREAD THROUGHOUT THE SITE. THEREFORE, A SURFACE CONTROL ACROSS THE ENTIRE SITE IS NEEDED TO PROVIDE ADEQUATE CONTAINMENT OF UNACCEPTABLE RISKS ASSOCIATED WITH SOILS. SURFACE CONTROLS ARE NOT USED ONLY TO PREVENT CONTACT WITH CONTAMINATED SOILS, BUT ALSO TO REDUCE INFILTRATION. REDUCTION OF INFILTRATION THROUGH THE SURFACE IS AN INTEGRAL PART OF THE GROUNDWATER GRADIENT CONTROL SYSTEM. ANY PART OF THE SITE THAT IS NOT PROPERLY COVERED WOULD ALLOW GREATER INFILTRATION AND BE COUNTER-PRODUCTIVE TO THE GROUNDWATER TREATMENT SYSTEM.

COMMENT (V):

THE PRPS BELIEVE THAT THE GROUNDWATER EXTRACTION SYSTEM PROPOSED BY THE U.S. EPA IS EXTREMELY COSTLY COMPLICATED AND UNRELIABLE.

U.S. EPA'S RESPONSE (V):

THE PRIMARY GOALS OF THE GROUNDWATER EXTRACTION SYSTEM ARE TO PROVIDE GRADIENT CONTROL TO STABILIZE FLOW FROM THE WATER TABLE INTO THE UPPER INTERMEDIATE ZONE AND TO PUMP AND TREAT THE CONTAMINATED UPPER INTERMEDIATE UNIT AND WATER TABLE AQUIFER. THE INTERCEPTOR DRAINS AND WET WELL SYSTEM PROPOSED BY THE PRPS, FAIL TO CONTROL MIGRATION OF THE CONTAMINATED WATER TABLE DOWNWARD, WHICH COULD CONTINUE TO CONTAMINATE THE UPPER

INTERMEDIATE UNIT INDEFINITELY. U.S. EPA'S PROPOSED ALTERNATIVE COULD ALLOW FOR CLEANUP OF THE UPPER INTERMEDIATE UNIT WITHIN: 5 TO 10 YEARS.

THE COMMENTER HAS PROVIDED NO BASIS FOR STATEMENTS REGARDING COST WHILE U.S. EPA HAS PROVIDED SUBSTANTIAL DETAILS OF COST ESTIMATION THAT ARE WITHIN AN ACCEPTABLE FS RANGE OF +50 AND -30 PERCENT.

COMMENT (VI):

ACCORDING TO THE PRPS, THE FS DOES NOT PROVIDE AN ESTIMATE OF THE CHEMICAL QUALITY OF THE WASTE STREAM FROM EXTRACTED GROUNDWATER OR SURFACE WATER THAT WILL REQUIRE TREATMENT.

U.S. EPA'S RESPONSE (VI):

THE CHEMICAL QUALITY OF THE EXTRACTED GROUNDWATER OR SURFACE WATER TO BE TREATED DOES NOT NEED TO BE "ESTIMATED" AS THE COMMENTER SUGGESTS. THE DATA OBTAINED AND PRESENTED IN THE RI REPORT ALREADY PROVIDE CURRENT CHEMICAL CHARACTERIZATION OF ALL WATER TO BE TREATED. THE PROPOSED GROUNDWATER TREATMENT SYSTEM IS BASED ON THESE RESULTS. THE CURRENT GROUNDWATER AND SURFACE WATER QUALITY WAS EVALUATED BY PROCESS DESIGN ENGINEERS AND NO CURRENT CONTAMINANT CHARACTERISTICS PRESENTED AN UNSOLVABLE PROBLEM TO DESIGNING A GROUNDWATER TREATMENT SYSTEM TO MEET ARARS. A TREATABILITY STUDY COULD BE INCORPORATED IN THE REMEDIAL DESIGN PHASE. ONCE THE SYSTEM PROVES EFFECTIVE AND IS IN PLACE, MONITORING WILL BE CONDUCTED TO ASSURE ITS EFFICIENCY.

COMMENT (VII):

THE PRPS CLAIM THAT THE FS DOES NOT DEVELOP NOR EVALUATE A SUFFICIENT NUMBER OF ALTERNATIVES TO RATIONALLY EVALUATE REDUCTION OF RISK.

U.S. EPA'S RESPONSE (VII):

IN ACCORDANCE WITH REQUIREMENTS UNDER THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA), AN FS SHOULD DEVELOP A RANGE OF TREATMENT ALTERNATIVES WHICH IS DELINEATED PRIMARILY BY THE DEGREE TO WHICH EACH ALTERNATIVE RELIES ON LONG-TERM MANAGEMENT OF RESIDUALS OR UNTREATED WASTE. A KEY CONSIDERATION IS THE DEGREE TO WHICH THE ALTERNATIVE REDUCES TOXICITY, MOBILITY, AND VOLUME (TMV) OF CONTAMINANTS AS ITS PRINCIPAL COMPONENT. IN ADDITION TO A RANGE OF TREATMENT ALTERNATIVES, A CONTAINMENT OPTION INVOLVING LITTLE OR NO TREATMENT AND A NO ACTION ALTERNATIVE SHOULD ALSO BE DEVELOPED. THE FS DEVELOPS A RANGE OF ALTERNATIVES THAT BEGIN WITH NO ACTION, MONITORING AND A RANGE OF TREATMENT ALTERNATIVES STARTING WITH PARTIAL TREATMENT AND FULL TREATMENT TO THE MAXIMUM EXTENT PRACTICABLE. THIS PROCESS ALLOWS FOR A THOROUGH ANALYSIS OF ALTERNATIVES AND IS CONSISTENT WITH THE NCP AND SARA. ALTERNATIVE 2 REPRESENTS THE MINIMUM ACTION ALTERNATIVE WITH MONITORING ONLY WHILE ALTERNATIVE 3 REPRESENTS CONTAINMENT WITH MINIMAL TREATMENT. ALTERNATIVE 4 PROVIDES A BETTER CONTAINMENT SCENARIO WITH MINIMAL TREATMENT. ALTERNATIVES 5 THROUGH 7 PROVIDE A FULL RANGE OF TREATMENT ALTERNATIVES THAT INCREMENTALLY GO FROM "HOT SPOT" SOILS TREATED TO FULL TREATMENT TO THE MAXIMUM EXTENT POSSIBLE. ALTERNATIVES 8 AND 9 PROVIDE AN ADDITIONAL RANGE OF TREATMENT ALTERNATIVES BY CONSIDERING AN ADDITIONAL TREATMENT TECHNOLOGY.

COMMENT (VIII):

ACCORDING TO THE PRPS, THE FS COST ESTIMATES ARE POORLY DEVELOPED AND SUFFER FROM SEVERAL MAJOR DEFECTS.

U.S. EPA'S RESPONSES (VIII):

ALL COSTS ARE DEVELOPED USING THE U.S. EPA COSTING MANUAL TO PROVIDE A +50 AND -30 PERCENT COST ESTIMATE. THE COSTING PROCEDURES USED BY U.S. EPA DID APPLY PROPER CONTINGENCY FACTORS WHERE APPROPRIATE ACCORDING TO ESTABLISHED COSTING GUIDELINES. THE TOTAL COST FOR A SPECIFIC ALTERNATIVE IS THE SUM OF THE CAPITAL COST PLUS THE PRESENT WORTH OF ALL OPERATION AND MAINTENANCE COSTS. AN IMPORTANT POINT TO NOTE IS THAT THE COSTING METHODOLOGY IS CONSISTENT FOR ALL ALTERNATIVES WHICH ALLOW DIRECT COMPARISON OF EACH ALTERNATIVE BASED SOLELY ON COST, REGARDLESS OF HOW TECHNICALLY SIMILAR OR DISSIMILAR THE ALTERNATIVES MAY BE. THE PROJECT COST ESTIMATE BECOMES MORE REFINED AS THE DESIGN PROGRESSES FROM ROD TO FINAL DESIGN. A MORE

DETAILED COST ANALYSIS TAKING INTO ACCOUNT TIME COMPLETION SCHEDULES WILL BE DONE IN THE REMEDIAL DESIGN PHASE WHEN THE PROPER PLANS AND SPECIFICATIONS ARE AVAILABLE.

C. PRP'S PREFERRED REMEDIAL ACTION ALTERNATIVE:

THIS SECTION PROVIDES A REVIEW AND EVALUATION OF THE ALTERNATIVES PROPOSED BY THE PRP GROUP. IT PROVIDES A GENERAL RESPONSE RATHER THAN A FOCUSED RESPONSE ON EACH SPECIFICALLY PROPOSED ELEMENT. OF THE NINE COMPONENTS PROPOSED BY THE PRPS, SEVEN OF THEM COINCIDE WITH U.S. EPA'S PROPOSED ALTERNATIVE 5. THE TWO COMPONENTS THAT ARE DIFFERENT ARE STILL FUNDAMENTALLY THE SAME IN REGARD TO REMEDIAL ACTIONS THAT ARE REQUIRED BUT DIFFERENT IN THE CHOICE OF TECHNOLOGIES.

THE GROUNDWATER EXTRACTION SYSTEM CONSISTING OF AN INTERCEPTOR DRAIN AND WET WELL SYSTEM AND THE PROPOSED PERMEABLE COVER ARE THE TWO AREAS THAT DIFFER. THIS PROPOSAL FAILS TO STOP GROUNDWATER CONTAMINATION FROM MIGRATION DOWNWARD AND DOES NOT PROVIDE AN EFFECTIVE EXTRACTION SYSTEM FOR CONTAMINATED GROUNDWATER. THE PRP'S PROPOSAL WOULD REQUIRE INTERMEDIATE UNIT GROUNDWATER TREATMENT INDEFINITELY.

THE PERMEABLE SOIL COVER ALLOWS FOR INCREASED POTENTIAL OF GROUNDWATER CONTAMINATION MOVING WITH THE UPPER INTERMEDIATE ZONE FROM THE WATER TABLE ZONE AND NOT ADEQUATELY CONTAIN SOILS WITH RESIDUAL CONTAMINATION ON SITE, THUS RESULTING IN INADEQUATE PROTECTION FROM EXPOSURE TO HUMAN RECEPTORS AND ENVIRONMENT. THE PROPOSAL, HOWEVER, APPEARS TO BE FAIRLY WELL IN AGREEMENT WITH U.S. EPA'S SELECTED ALTERNATIVE WITH RESPECT TO THE REMAINDER OF COMPONENTS, AS PRESENTED IN THE ROD "SELECTED REMEDY"

SECTION BY SECTION RESPONSE TO CRA REPORT

ONLY COMMENTS THAT WERE NOT SPECIFICALLY ADDRESSED IN THE EXECUTIVE SUMMARY RESPONSE WILL BE CONSIDERED IN THE FOLLOWING RESPONSE SECTION. SECTION 2.0 OF THE CRA REPORT ADDRESSES THE RI REPORT AND COMMENTS WERE GROUPED INTO GENERAL TOPICAL CATEGORIES OR CONCERNS FOR EACH SUBSECTION AND RESPONDED TO ACCORDINGLY.

SECTION 2.1 - GENERAL COMMENT:

THE PRPS CLAIM THAT CERTAIN DOCUMENTS WERE NOT AVAILABLE TO THEM.

U.S. EPA'S RESPONSE:

ALL THE DOCUMENTS REFERENCED BY THE PRPS WERE AVAILABLE IN THE ADMINISTRATIVE RECORD LOCATED IN THE REPOSITORY AT THE DEERFIELD U. S. POST OFFICE OR AT OUR REGIONAL OFFICE IN CHICAGO. THE REMEDIAL ACTION MASTER PLAN (RAMP) IS NOT A DOCUMENT THAT WAS USED TO ASSESS SITE CONDITIONS OR EVALUATE ALTERNATIVES IN THE FS PROCESS. ITEMS I) THROUGH IX) WERE DEVELOPED TO ADDRESS SITE-SPECIFIC CONDITIONS AND OBJECTIVES. THIS IS THOROUGHLY DISCUSSED IN THE RI REPORT. WORK PLANS AND QUALITY ASSURANCE AND PROJECT PLANS (QAPPS) PROVIDE MORE DETAILED INFORMATION REGARDING THE SCOPE OF WORK TO BE PERFORMED AND THE METHODOLOGY. THESE DOCUMENTS WERE FINAL AND AVAILABLE FOR REVIEW. PHASE I WORK PLAN AND QAPP WERE FINALIZED 7/27/84 AND 5/29/84, RESPECTIVELY. PHASE II WORK PLAN AND QAPP WERE FINALIZED 11/5/85 AND 10/24/85, RESPECTIVELY. THESE DOCUMENTS COULD HAVE BEEN REQUESTED ANY TIME AFTER THEY WERE FINALIZED.

COMMENT:

ACCORDING TO THE PRPS, THE SOIL SCREENING PROCEDURES WERE INADEQUATE.

U.S. EPA'S RESPONSE:

THE PHASE II SCREENING PROCEDURE WAS DESIGNED TO ELIMINATE THE NEED FOR SENDING ALL SAMPLES TO CLP ANALYSIS, THUS RESULTING IN SIGNIFICANT COST SAVINGS. AFTER THE SCREENING OF ALL THE ON-SITE SOIL SAMPLES WAS COMPLETE, A PLOT OF THE RESULTS WAS EVALUATED SO THAT THE APPROPRIATE SAMPLES COULD BE SENT TO THE CLP LABORATORIES. THE SELECTION OF SAMPLES FOR CLP ANALYSIS WAS BASED ON THE FOLLOWING CRITERIA:

A. THE CONCENTRATION OF CONTAMINANT LEVELS;

- B. THE NUMBER OF CONTAMINANTS IDENTIFIED IN A PARTICULAR SAMPLE OR GROUP OF SAMPLES;
- C. THE LOCATION OF THE SAMPLE ON THE SITE;
- D. THE DEPTH OF THE SAMPLE FROM THE SURFACE; AND
- E. THE PROXIMITY OF THE SAMPLE TO A BURIED DRUM OR VISUALLY CONTAMINATED AREA.

SEVERAL "CLEAN" SAMPLES WERE SELECTED FOR CLP ANALYSIS TO VERIFY THE ACCURACY OF THE SCREENING PROGRAM. PHASE I SAMPLING INCLUDED A COMPOSITE OF FIVE SAMPLE PORTIONS PER 100 SQ. FT. ACROSS THE WHOLE SITE FOR A TOTAL OF 49 SURFACE SOIL SAMPLES. PHASE II COLLECTED 319 SAMPLES OUT OF WHICH 52 ON-SITE SAMPLES, 19 BACKGROUND SAMPLES, AND 25 OFF-SITE SAMPLES WERE SENT FOR HAZARDOUS SUBSTANCE LIST (HSL) ANALYSIS. THESE SAMPLE LOCATIONS ARE REPRESENTATIVE OF THE WHOLE SITE, AS DEMONSTRATED IN THE RI REPORT. FIGURES 3-9 AND 3-10. THESE MAPS CLEARLY SHOW THAT THE SAMPLING PROGRAM, INCLUDING SCREENING, ARE NOT BIASED, BUT REPRESENTATIVE OF THE WHOLE SITE.

COMMENT:

ACCORDING TO THE PRPS, THE SOIL SAMPLE SELECTION WAS INADEQUATE.

U.S. EPA'S RESPONSE:

THE REGRADING OF THE SITE IS DISCUSSED IN SECTION 1.2.3 OF THE RI REPORT. THE SITE SURFACE REGRADING WAS DONE IN CONJUNCTION WITH THE SURFACE CLEANUP PERFORMED BY THE U.S. EPA IN 1981-1982. THE SURFACE CLEANUP INCLUDED ONLY INCIDENTAL CONTAMINATED SOIL REMOVAL. REGRADING WAS PERFORMED TO CONTROL SITE RUNON/RUNOFF. THIS INFORMATION WAS KNOWN DURING THE DEVELOPMENT OF THE SAMPLING PLANS. AS A RESULT, THE PHASE I SURFACE SOIL SAMPLING PROGRAM WAS DESIGNED TO CHARACTERIZE THE SURFACE SOILS REMAINING ON SITE SINCE LITTLE CONTAMINATED SOIL WAS REMOVED. IT IS U.S. EPA'S OPINION THAT THE MINOR SOIL REMOVAL AND REGRADING EFFORTS DID NOT REDISTRIBUTE SURFACE SOILS ENOUGH THAT COMPOSITE SAMPLES FROM THE 100 FT 2 BLOCKS WOULD NOT BE REPRESENTATIVE OF UNDISTURBED SOILS. THE PHASE II SAMPLING PROGRAM WAS DEVELOPED TO DETERMINE THE VERTICAL EXTENT OF CONTAMINATION BELOW CONTAMINATED SURFACE SOILS IDENTIFIED AS PHASE I.

COMMENT:

THE PRPS CLAIM THAT THE BACKGROUND COMPARISON WAS INADEQUATE.

U.S. EPA'S RESPONSE:

THE SELECTION OF BACKGROUND SAMPLES USED FOR COMPARISON TO ON-SITE SOILS PROVIDED A CROSS SECTION OF SOIL TYPES IN THE LOCAL AREA. THESE INCLUDED AGRICULTURAL, RESIDENTIAL AND MINE SPOIL. THE AVERAGE BACKGROUND DATA, THEREFORE, TOOK INTO ACCOUNT ALL POSSIBLE CONTRIBUTION TO CHEMICAL CHARACTERISTICS OF LOCAL SOILS DUE TO NATURALLY OCCURRING MATERIALS. A COMPARISON WAS ALSO MADE TO RESIDENTIAL SOILS ALONE WHICH RESULTED IN SIMILAR CONCLUSIONS. IN BOTH ANALYSES THE SITE DID SHOW CONTAMINANT LEVELS SEVERAL ORDERS OF MAGNITUDE ABOVE BACKGROUND, THERE BY NOT WARRANTING FURTHER SEPARATE SOIL TYPE COMPARISON (SEE PAGE 4-75 OF THE RI REPORT). IN REGARD TO INORGANICS, AN ADDITIONAL COMPARISON WAS MADE TO CONFIRM INORGANIC CONTAMINATION PRESENT ON SITE. LEVELS WERE COMPARED TO U.S. TYPICAL CONCENTRATIONS WHICH INDICATED THAT 11 OUT OF 20 INORGANICS EXCEEDED BACKGROUND. AN ON-SITE SOIL WAS DETERMINED TO BE CONTAMINATED IF ITS MEAN AND MAXIMUM VALUES EXCEEDED THE UPPER 95% CONFIDENCE LIMIT FOR BACKGROUND SOILS. IF THE MEAN CONCENTRATION DID NOT EXCEED THE UPPER 95% CONFIDENCE LIMIT, BUT THE MAXIMUM DID, THEN AN EVALUATION WAS MADE BASED ON FREQUENCY. BASED ON PREVIOUS DISCUSSIONS, THE PHE IS REPRESENTATIVE OF SITE CONTAMINANTS AND IS NOT TYPICAL OF BACKGROUND CONDITIONS.

SECTION 2.2 - ANALYTICAL DATA

COMMENT:

THE PRPS STATE THAT THE ANALYTICAL DATA WERE REVIEWED IMPROPERLY.

U.S. EPA'S RESPONSE:

ALL THE DATA OBTAINED DURING THE RI UNDERWENT QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) ASSESSMENT ACCORDING TO PROCEDURES PROVIDED IN APPENDIX B OF VOLUME 2 OF THE RI REPORT. THESE PROCEDURES WERE THE ACCEPTED PROTOCOL AT THAT TIME. THE DATA WERE REVIEWED BY U.S. EPA REGION V STAFF AND APPROPRIATE QUALIFIERS OR INVALIDATION WAS NOTED. TABLES 4-2 AND 4-3 OF THE RI SUMMARIZE DATA PROBLEMS IDENTIFIED. IN ADDITION TO U.S. EPA REVIEW, THE DATA WERE ALSO ASSESSED FOR CONTRACT LAB PROGRAM (CLP), AND CENTRAL REGIONAL LAB (CRL) DATA COMPLETION BY ICF/SRW AND CH2M HILL STAFF. THESE QUALITY ASSURANCE OBJECTIVES AND QA/QC ASSESSMENTS WERE DETAILED IN THE APPROVED PHASE II QAPP DATED OCTOBER 24, 1986 PRIOR TO INITIATING FIELD ACTIVITIES.

COMMENT:

THE PRPS CLAIM THAT THE DATA WERE QUALIFIED INADEQUATELY.

U.S. EPA'S RESPONSE:

DATA RESULTS ATTRIBUTABLE TO LABORATORY CONTAMINATION ARE REPRESENTED IN SECTION 4 OF THE RI REPORT. PARAMETERS SUCH AS METHYLENE CHLORIDE, ACETONE, AND TOLUENE WITH CONCENTRATIONS LESS THAN 10 TIMES THE CONCENTRATION DETECTED IN THE BLANK ARE QUALIFIED AS LAB CONTAMINANTS, BY BOTH THE CLP AND THE U.S. EPA QA/QC OFFICE. THE VALID DATA ARE PRESENTED IN SUMMARY TABLES IN THE RI VOLUME 11 AND ARE DESIGNATED WITH THE LETTER "B". DATA ANALYSIS PERFORMED IN SECTION 4 OF THE RI REPORT DISTINGUISHES THOSE PARAMETERS ATTRIBUTABLE TO LABORATORY CONTAMINATION AND ELIMINATES THEM AS SITE-RELATED CONTAMINATION.

THOSE CONCENTRATION LEVELS REPORTED WITHIN BRACKETS ARE QUALIFIED AS CONCENTRATIONS BELOW THE LABORATORY DETECTION LIMITS, WHICH IS NOT CONSIDERED A POSITIVE HIT. THOSE PARAMETERS QUALIFIED WITH A "J" ARE AN ESTIMATED VALUE. IF "J" IS ACCOMPANIED BY BRACKETS, IT IS AN ESTIMATED CONCENTRATION BELOW THE CONTRACT LABORATORY DETECTION LIMIT.

SECTION 2.3 - HYDROGEOLOGICAL CONCERNS

COMMENT:

ACCORDING TO THE PRPS, IMPROPER METHODS WERE USED TO DEFINE HYDROGEOLOGICAL PROPERTIES.

U.S. EPA'S RESPONSE:

AS DISCUSSED PREVIOUSLY, WE AGREE THAT ADDITIONAL HYDROGEOLOGICAL CHARACTERIZATION IS NECESSARY. IT WAS NECESSARY TO SCREEN MONITORING WELLS ACROSS MULTIPLE STRATA FOR TWO REASONS: 1) MANY OF THE STRATA ENCOUNTERED WERE TOO THIN TO BE ISOLATED DURING WELL CONSTRUCTION AND, 2) THE STRATA WERE, FOR THE MOST PART, VERY FINE GRAINED AND RELATIVELY UNFRACTURED, SO IT WAS NECESSARY TO INSTALL LONG GRAVEL PACKS TO ASSURE THAT THE WELLS WOULD YIELD SUFFICIENT WATER FOR SAMPLING. THE CROSS SECTIONS AND BORING LOGS ARE VERY DETAILED, SO THAT MANY OF THE STRATA IDENTIFIED ARE VERY SIMILAR TO THE UNITS IMMEDIATELY ADJACENT. CARE WAS TAKEN TO AVOID INSTALLING MONITORING ZONES ACROSS STRATA WHICH APPEARED, ON THE BASIS OF LITHOLOGY OR FRACTURE DENSITY, TO BE HYDRAULICALLY DISSIMILAR. FURTHERMORE, IF THE MONITORED ZONES CROSSED STRATA OF DISSIMILAR PERMEABILITIES, THE HYDRAULIC CONDUCTIVITIES MEASURED WOULD NOT BE "ATYPICAL", BUT WOULD RATHER BE VALUES MOST SIMILAR TO THE MOST CONDUCTIVE UNIT INTERCEPTED. THE COMMENTER DOES NOT APPEAR TO BELIEVE THE HYDRAULIC CONDUCTIVITIES OBTAINED FOR SANDSTONE AND COAL. THE SANDSTONE WAS FINE-GRAINED, SILTY, AND WELL CEMENTED. U.S. EPA BELIEVES THAT FIELD DATA SHOULD NOT BE DISREGARDED JUST BECAUSE IT DOES NOT FIT A PERCEIVED OR TEXTBOOK NOTION.

COMMENT:

THE PRPS BELIEVE THAT THERE IS A NEED TO DEFINE REGIONAL HYDROGEOLOGY.

U.S. EPA'S RESPONSE:

REGIONAL HYDRAULIC INFORMATION IS NOT NEEDED TO REMEDIATE A SITE. MONITORING WELL MW-8 WAS OMITTED INITIALLY BECAUSE OF THE CHANGE IN STRATIGRAPHY BETWEEN IT AND THE REMAINDER OF THE SITE AS SHOWN ON THE CROSS SECTION

PROVIDED IN BOTH THE RI AND FS REPORTS.

COMMENT:

THE PRPS BELIEVE THAT HYDRAULIC CONDUCTIVITIES ARE UNCERTAIN.

U.S. EPA'S RESPONSE:

THE COMMENTER IS UNCERTAIN OF THE HYDRAULIC CONDUCTIVITIES BECAUSE NORMALLY A PUMP TEST IS PERFORMED. PUMP TESTS ARE NOT FEASIBLE IN LOW PERMEABILITY STRATA. THEY WERE CONSIDERED DURING PHASE II FIELD ACTIVITIES BUT DUE TO LOW YIELD OF MOST WELLS (LESS THAN 1 GPM) AND THE ABILITY OF THE WELLS TO BE BAILED DRY DURING PURGING THEY WERE NOT PERFORMED.

COMMENT:

THE PRPS DO NOT AGREE WITH U.S. EPA'S WELL INSTRUMENTATION EMPLOYED DURING THE REMEDIAL INVESTIGATION.

U.S. EPA'S RESPONSE:

THE USE OF PVC MATERIAL FOR WELL CONSTRUCTION SEEMS TO BE A FAVORITE TOPIC OF DISCUSSION. THE SPECIFICATIONS FOR WELL CONSTRUCTION WERE APPROVED FOR BOTH THE PHASE I AND PHASE II WELL INSTALLATION ACTIVITIES. ALL RECENT STUDIES HAVE INDICATED THAT PVC IS A REASONABLE WELL MATERIAL, PROVIDED THE WELL IS PURGED BEFORE SAMPLING. ALL WELLS AT THE SUMMIT NATIONAL SITE WERE PURGED PRIOR TO SAMPLING.

COMMENT:

THE PRPS DISAGREE WITH U.S. EPA'S INTERPRETATION OF GROUNDWATER CONDITIONS.

U.S. EPA'S RESPONSE:

THERE ARE TWO AQUIFERS IDENTIFIED AT THE SITE PLUS A SERIES OF INTERMEDIATE UNITS, NOT THREE AQUIFERS AS THE COMMENTER STATES. THE INTERMEDIATE UNITS DO NOT CONSTITUTE AQUIFERS. THE CALCULATIONS USING DARCY'S LAW TO QUANTIFY GROUNDWATER FLOW WERE ORDER-OF-MAGNITUDE ESTIMATES ONLY; THEY WERE NEVER INTENDED TO BE QUANTITATIVE. IT SEEMS THAT THE COMMENTATOR IS LOOKING FOR CONCLUSIONS BEYOND THE SCOPE OF THE RI REPORT. THE RI DID NOT PRESENT WATER BALANCE CALCULATIONS AS THEY SUGGEST. AGAIN, IT WAS CLEARLY INDICATED THAT ALL FLOW CALCULATIONS WERE ORDER-OF-MAGNITUDE ESTIMATES.

COMMENT:

THE PRPS HAVE AN ALTERNATIVE ASSESSMENT OF THE FLOW SYSTEM.

U.S. EPA'S RESPONSE:

THE COMMENTER DOES NOT INDICATE THE REASON FOR BELIEVING THAT THE INTERMEDIATE UNITS CONSTITUTE MULTIPLE HYDROGEOLOGIC UNITS. ALTHOUGH THE LIMESTONES INDICATED EXTREMELY LOW PERMEABILITIES, THE REMAINDER OF THE STRATA IN THAT ZONE ALSO HAVE LOW PERMEABILITIES. NO HIGH PERMEABILITY STRATA WERE ENCOUNTERED, SO THERE IS NO REASON TO DIVIDE THE SERIES OF LOW-PERMEABILITY STRATA INTO MULTIPLE AQUITARDS WITH NO INTERVENING AQUIFERS. THE RI ACKNOWLEDGES THAT THE INTERMEDIATE UNITS CONSTITUTE A HIGHLY HETEROGENEOUS AQUITARD, AND AS A RESULT U.S EPA DOES NOT BELIEVE THAT INTERPRETATION OF THE SITE IS ENHANCED BY FURTHER DISSECTION OF THIS SERIES OF STRATA. THE COMMENTER'S SUGGESTION THAT THE LIMESTONE IS RELATIVELY CONTINUOUS AND TIGHT AND THERE BY PREVENTS INTERFERENCE BETWEEN THE TWO INTERMEDIATE ZONES IS INCORRECT. THE HYDRAULIC TEST SIMPLY SUGGESTS THAT WE MEASURED A VERY LOW PERMEABILITY IN ONE WELL. GIVEN THE RETURN OF SINGLE WELL TEST, IT IS NOT PRUDENT TO EVALUATE THE ENTIRE SITE INTERPRETATION ON A SINGLE VALUE.

THE COMMENTER'S INCLUSION OF THE LIMESTONE UNIT INTO A SUBSURFACE HYDROGEOLOGIC WATER BALANCE APPEARS TO CONSTITUTE AN OVER INTERPRETATION OF THE DATA. THE POSSIBILITY THAT DENSE NON-AQUEOUS PHASE LIQUID (DNAPL) COULD MIGRATE VERTICALLY DOWNWARD AGAINST THE GROUNDWATER FLOW THAT IS UP-GRADIENT IN THE AREA OF MW-22 AND

MW-23 DOES NOT ALTER ANY CONCLUSIONS.

SECTION 2.4 - CONTAMINANT DISTRIBUTION SOILS SAMPLING PROGRAM:

THESE COMMENTS WERE SIMILAR TO THE GENERAL COMMENTS IN SECTION 2.1. THE SOIL SAMPLING PROGRAM WAS DEVELOPED TO PROVIDE DATA ON THE HORIZONTAL AND VERTICAL EXTENT OF SOIL CONTAMINATION AT THE SUMMIT NATIONAL SITE. AN IMPORTANT CONSIDERATION IN DEVELOPING A REPRESENTATIVE SAMPLING PLAN IS THE IMPLEMENTATION OF A POTENTIAL REMEDIAL ALTERNATIVE. THE 48 SQUARE BLOCKS ESTABLISHED BY THE SITE GRID AND A SAMPLING PLAN FOR EVALUATING FOUR CONSECUTIVE 2 FT. THICK SOIL ZONES IN EACH GRID PROVIDED DATA FOR EVALUATION OF 192 SOIL "UNITS" AT THE SITE. EACH 100 FT. SQ. BY 2 FT. THICK ZONE WAS CONSIDERED A WORKABLE UNIT OF SOIL THAT COULD BE ISOLATED EFFECTIVELY DURING REMEDIAL ACTION IMPLEMENTATION. ANY FURTHER BREAKDOWN THAT EXCEEDED 192 SOIL UNITS ON AN 11 ACRE SITE WAS DEEMED UNNECESSARY. SAMPLE COMPOSITING IS AN ACCEPTABLE SCIENTIFIC METHODOLOGY USED FOR CHARACTERIZING A PARTICULAR AREA. IT PROVIDES DATA THAT ARE SIGNIFICANTLY MORE REPRESENTATIVE THAN ONE GRAB SAMPLE FOR THE ENTIRE AREA.

FIELD SCREENING:

THESE COMMENTS WERE SIMILAR TO THE GENERAL COMMENTS IN SECTION 2.1. THE SOIL SAMPLING PROCEDURES AND PROTOCOLS ARE PRESENTED IN SECTION 3.2 OF THE RI REPORT. THE INTENT OF THIS, OR ANY SOIL SAMPLING PROGRAM, IS TO PROVIDE THE NATURE AND EXTENT OF CONTAMINATED SOILS. THIS GOAL LENDS ITSELF TO THE ANALYSIS OF SAMPLES PRESUMED TO BE CONTAMINATED. ANALYSIS OF CLEAN SAMPLES WILL ALLOW FOR A REAL DISTRIBUTION OF CLEAN SOILS FROM WHICH CONTAMINATED SOILS DELINEATION COULD BE ASSUMED. HOWEVER, ANALYSIS OF CLEAN SOILS DOES NOT ALLOW FOR THE DETERMINATION OF SOIL CONTAMINANT NATURE. AS STATED IN THE RI, "CLEAN" SAMPLES WERE ALSO SELECTED FOR CLP ANALYSIS TO VERIFY THE ACCURACY OF THE SCREENING PROGRAM.

CEMENT PLANT SOILS:

THE CEMENT PLANT SOILS WERE DESIGNATED AS BACKGROUND SAMPLES DURING THE PREPARATION OF THE SAMPLING PLAN. BACKGROUND SAMPLES WERE CHOSEN FROM AREAS THAT WERE ASSUMED TO BE ISOLATED FROM SITE-RELATED ACTIVITIES. HOWEVER, DURING THE COURSE OF THE REMEDIAL INVESTIGATION, IT WAS CLEAR THAT THE CEMENT PLANT PROPERLY RECEIVED DIRECT DRAINAGE FROM THE SITE DURING ITS ACTIVE OPERATION PRIOR TO REROUTING OF THE SOUTHERN DITCH. THE ANALYTICAL DATA SUPPORTED THIS CONCLUSION. AT THAT TIME, IT WAS DECIDED THAT THE CEMENT PLANT SOILS SHOULD BE REMOVED FROM CONSIDERATION AS BACKGROUND. THE U.S. EPA HAS SUCCESSFULLY ASSESSED OFF-SITE SOIL CONTAMINATION THAT IS SITE RELATED. THE BACKGROUND SOILS WERE DISCUSSED SEPARATELY IN THE PHE.

ANALYTICAL RESULTS (SOILS):

THE INTENT OF SECTION 4 OF THE RI REPORT WAS TO PRESENT THE DATA OBTAINED AND ASSESS THE NATURE AND EXTENT OF SITE-RELATED CONTAMINATION IN VARIOUS SITE MEDIA. THE POTENTIAL RISKS THAT THESE SITE-RELATED CONTAMINANTS HAVE ON THE PUBLIC HEALTH AND ENVIRONMENT ARE PRESENTED IN SECTIONS 5 AND 6 OF THE RI REPORT. THE COMMENTER STATEMENT CONCERNING PRESENTATION OF VOLATILE ORGANIC COMPOUNDS (VOCs), BASE/NEUTRAL/ACIDS (BNAS), PESTICIDES/POLYCHLORINATED BIPHENYLS (PCBS) AND INORGANIC DATA USING TOTAL MASS CAN ONLY BE APPLIED TO THE FORMAT FOR PRESENTATION AND EVALUATION OF DATA, NOT ASSESSMENT OF RISK. THERE IS NOT A CORRELATION OF TOTAL MASS OF VOC TO POTENTIAL RISK. CONSIDERATION INVOLVING EXTENT OF SOIL REMOVAL IS MORE APPROPRIATELY BASED ON RISK REDUCTION RATHER THAN CONTAMINANT MASS REDUCTION. RISK REDUCTION TECHNOLOGIES MAY EITHER INCREASE OR DECREASE CONTAMINANT MASS BUT WILL RESULT IN REDUCTION OF TOXICITY AND IN SOME CASES MOBILITY.

ANALYTICAL RESULTS (SURFACE WATER):

BASED ON WATER TABLE FLOW DATA OBTAINED DURING THE RI INVESTIGATION, THE WATER TABLE MAY DISCHARGE TO THE DRAINAGE DITCHES ONLY DURING PERIODS OF HIGH GROUNDWATER FLOW. SURFACE WATER FLOW WAS INTERMITTENT DURING THE RI INVESTIGATION AND, THEREFORE, ANY COMPONENT OF GROUNDWATER FLOW FROM THE CEMENT PLANT TOWARD THE SOUTHERN DITCH PROBABLY HAD PASSED BENEATH THE DITCH AND DID NOT CONTRIBUTE DIRECTLY TO SURFACE WATER FLOW.

ANALYTICAL RESULTS (SEDIMENTS):

U.S. EPA DID COLLECT UPSTREAM DATA FOR SEDIMENTS FROM SAMPLE NUMBERS SD-OII-OOI AND SD-032-001. THESE

SAMPLES WERE OBTAINED FROM THE SAME LOCATION THAT WAS UPSTREAM OF ANY EFFECTS FROM THE SITE AND ARE CONSIDERED REPRESENTATIVE OF BACKGROUND QUALITY IN THE LOCAL DRAINAGE SYSTEM NEAR THE SITE. THIS WAS THE PRIMARY COMPARISON USED TO INDICATE A DOWNSTREAM SEDIMENT CONTAMINATION PROBLEM. COMPARISON OF SEDIMENTS TO BACKGROUND SOILS PROVIDED AN ADDITIONAL ANALYSIS THAT RESULTED IN SIMILAR CONCLUSIONS BEING MADE. THIS FURTHER ANALYSIS DID NOT RULE OUT THAT THE BACKGROUND SOILS MAY BE AN ADDITIONAL SOURCE OF OFF-SITE SEDIMENT CONTAMINATION. THE UPSTREAM SAMPLE IN THE SOUTH DITCH WITH THE HIGHEST LEVEL OF CONTAMINATION WAS NOT THE SAMPLE USED FOR BACKGROUND.

ANALYTICAL RESULTS (BURIED MATERIALS):

THE FURTHER EVALUATION OF THE MAGNETOMETER DATA WAS NOT PERFORMED USING ANY DATA OTHER THAN WHAT WERE PROVIDED IN THE RI REPORT. THE EVALUATION WAS MAINLY AN ONGOING DEVELOPMENT OR REINTERPRETATION OF THE SAME MAGNETOMETER DATA. THE RESULTS OF THE GEOPHYSICAL INVESTIGATIONS ARE PRESENTED AS APPENDIX G OF THE RI REPORT VOLUME 11.

A SUBSURFACE INVESTIGATION CONSISTING OF PARALLEL TRENCHES ACROSS THE SITE WOULD BE AN EXPENSIVE AND UNNECESSARILY DANGEROUS APPROACH TO SEARCHING FOR BURIED DRUMS, ESPECIALLY SINCE MAGNETOMETER DATA HAS IDENTIFIED AREAS MOST LIKELY TO CONTAIN BURIED DRUMS. ALL DRUM ESTIMATES WERE MADE BASED ON VISUAL OBSERVATION AND COUNTING OF DRUMS IN OPEN THIS PITS AND WERE ASSUMED TO BE REPRESENTATIVE OF THE ENTIRE PARTICULAR ANOMALOUS AREA. EACH AREA THAT ENCOUNTERED DRUMS WAS EXCAVATED BY TWO TRENCHES THAT EXTEND BETWEEN ALL BOUNDARIES OF THE ANOMALOUS AREA.

SECTION 2.5 CONTAMINANT TRANSPORT AND FATE:

THE MAJORITY OF THIS SECTION PRESENTS CRA CONCERNS WITH THE RI REPORT. A POINT OF DISAGREEMENT WAS CONCERNING CONTAMINATION IN WELL MW-24 AND POTENTIAL OF TRACE CONTAMINATION IN MW-25. THE COMMENTER STATES THAT IF DOWNWARD MIGRATION WAS OCCURRING, CONTAMINATION ALSO WOULD BE DISCOVERED IN WELL MW-25 AT OR HIGHER THAN LEVELS IN MW-24. THE COMMENTER FAILS TO CONSIDER THE POSSIBILITY THAT THE CONTAMINANTS PASSED Laterally BENEATH MW-25 OR THAT CONTAMINANT TRANSPORT WAS AFFECTED BY FRACTURING. THE COMMENTER MAKES THE STATEMENT THAT IN ORDER TO MINIMIZE OFF-SITE MIGRATION OF CONTAMINANTS THE WATER TABLE AND UPPER INTERMEDIATE ZONES SHOULD BE THE FOCUS OF REMEDIAL ACTION ALTERNATIVES. THIS STATEMENT IS CONTRADICTORY TO COMMENT NUMBER 15 ON PAGE 45 OF THE PRP GROUP REPORT, WHEN THE COMMENTER STATES THAT GROUNDWATER EXTRACTION IN THE UPPER INTERMEDIATE UNIT SHOULD NOT BE CONTAINED FOR DETAILED ANALYSIS IN THE FS. IT IS UNCLEAR AS TO WHAT THE COMMENTER'S REAL PREFERENCE IS REGARDING THIS ISSUE.

SECTION 3.0 PUBLIC HEALTH EVALUATION GENERAL:

CONCENTRATIONS OF INDICATOR CHEMICALS PRESENT IN GROUNDWATER MONITORING WELLS WERE COMPARED TO ARARS IN TABLE 6-9 OF THE RI REPORT, AND THE INTAKES AND RISKS ASSOCIATED WITH INGESTION OF GROUNDWATER BY WORKERS ARE PRESENTED IN TABLES 6-27, 6-32 AND 6-33. SIMILARLY, INTAKES AND POTENTIAL RISKS ASSOCIATED WITH INGESTION BY FUTURE SITE RESIDENTS ARE PRESENTED IN TABLES 6-30, 6-34, AND 6-35. USE OF THE MAXIMUM DETECTED CONCENTRATION OF A CHEMICAL IN EVALUATING THE PLAUSIBLE MAXIMUM EXPOSURE SCENARIO IS CONSERVATIVE IN THAT IT ASSUMES REPEATED EXPOSURE TO THE MAXIMUM CONCENTRATION. HOWEVER, THE POSSIBILITY EXISTS THAT ADDITIONAL SAMPLING MAY RESULT IN CONCENTRATIONS THAT ARE GREATER THAN THE MAXIMUM DETECTED DURING THE RI. THIS COMMENT STATES THAT IN EVALUATING THE AVERAGE RISKS ONLY, PRESENCE OF PAHS. THIS SUBSET OF CHEMICALS IS IDENTIFIED IN TABLE 62. NON-CARCINOGENIC PAHS ARE NOT QUANTITATIVELY EVALUATED IN THIS ASSESSMENT. AS INDICATED IN TABLE 6-17 OF THE RI REPORT, THE AVERAGE AND MAXIMUM CONCENTRATIONS OF PCBS IN SOIL NEAR THE EASTERN PERIMETER OF THE SITE ARE 490 AND 540 UG/KG, RESPECTIVELY. UNDER THE EXPOSURE SCENARIOS EVALUATED, THESE CONCENTRATIONS CORRESPOND TO CANCER RISKS OF 9×10^{-7} AND 5×10^{-6} RESPECTIVELY.

CHILDREN EXPOSED TO SEDIMENT IN DITCH:

WHILE THE EXPOSURE ASSUMPTIONS PRESENTED ON PAGE 6-39 OF THE RI REPORT, USED TO EVALUATE EXPOSURE OF CHILDREN TO SEDIMENT ARE CONSERVATIVE FROM A FREQUENCY STANDPOINT, EXPOSURE IS ONLY EVALUATED OVER A THREE YEAR PERIOD, WHILE ACTUAL EXPOSURE MAY POSSIBLY OCCUR LESS FREQUENTLY OVER A LONGER TIME PERIOD.

TEENAGER EXPOSED TO SEDIMENT IN IMPOUNDMENTS:

NO ISSUES RAISED BY THE PRPS. THE MAXIMUM RISK IS LESS THAN 1×10^{-6} .

EXPOSURE TO WORKERS TO SOILS ON-SITE:

USE OF MAXIMUM CONCENTRATIONS IN EVALUATING THE PLAUSIBLE MAXIMUM EXPOSURE SCENARIOS HAS BEEN DISCUSSED ABOVE. ALSO AS DISCUSSED, ONLY CARCINOGENIC PAHS WERE EVALUATED IN THE PHE.

INGESTION OF WATER BY RESIDENTS AND WORKERS:

RISKS FROM INGESTION OF GROUNDWATER FROM THE WATER TABLE, INTERMEDIATE UNIT AND UPPER SHARON UNIT WERE PRESENTED SEPARATELY. IF THE CONTAMINATED WATER TABLE AND INTERMEDIATE UNIT ARE NOT CLEANED UP, THE POTENTIAL EXISTS THAT THE UPPER SHARON COULD BECOME CONTAMINATED.

SECTION 4.0 FEASIBILITY STUDY REPORT

SECTION 4.1 GENERAL

ADEQUATE CONTROLS SUCH AS DEED RESTRICTIONS IN THE USE OF THE SITE ARE REQUIRED TO ASSURE LONG TERM PROTECTIVENESS OF THE SELECTED ALTERNATIVES. THE SCENARIO OF FUTURE RISKS TO ON-SITE RESIDENTS REPRESENTS THE WORST CASE SCENARIO AND JUSTIFIES A REMEDIAL ACTION FOR THE SUMMIT NATIONAL SITE. THE RISKS ASSOCIATED WITH SUCH AN EXPOSURE SCENARIO ADDRESS THE MAIN SOURCE OF CONTAMINATION. THE REMEDIAL ALTERNATIVE IS DESIGNED TO MINIMIZE THREATS AT THE SOURCE LOCATION AND AFFECTED AREAS (I.E. CEMENT PLANT AND EASTERN PERIMETER).

SECTION 4.2 REMEDIAL TECHNOLOGY DEVELOPMENT

NO ISSUES RAISED BY THE PRPS.

RESIDENTIAL EXPOSURE TO SOIL:

ONLY CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBONS (PAHS) WERE INCLUDED IN EVALUATING THE RISKS TO OFF-SITE RESIDENTS DUE TO THE PRESENCE OF PAHS. THIS SUBSET OF CHEMICALS IS IDENTIFIED IN TABLE 6-2. NON-CARCINOGENIC PAHS ARE NOT QUANTITATIVELY EVALUATED IN THIS ASSESSMENT. AS INDICATED IN TABLE 6-17 OF THE RI REPORT, THE AVERAGE AND MAXIMUM CONCENTRATIONS OF PCBS IN SOIL NEAR THE EASTERN PERIMETER OF THE SITE ARE 490 AND 540 UG/KG, RESPECTIVELY. UNDER THE EXPOSURE SCENARIOS EVALUATED. THESE CONCENTRATIONS CORRESPOND TO CANCER RISKS OF 9×10^{-7} AND 5×10^{-6} RESPECTIVELY.

CHILDREN EXPOSED TO SEDIMENT IN DITCH:

WHILE THE EXPOSURE ASSUMPTIONS PRESENTED ON PAGE 6-39 OF THE RI REPORT, USED TO EVALUATE EXPOSURE OF CHILDREN TO SEDIMENT ARE CONSERVATIVE FROM A FREQUENCY STANDPOINT, EXPOSURE IS ONLY EVALUATED OVER A THREE YEAR PERIOD, WHILE ACTUAL EXPOSURE MAY POSSIBLY OCCUR LESS FREQUENTLY OVER A LONGER TIME PERIOD.

TEENAGER EXPOSED TO SEDIMENT IN IMPOUNDMENTS:

NO ISSUES RAISED BY THE PRPS. THE MAXIMUM RISK IS LESS THAN 1×10^{-6} . EXPOSURE TO WORKERS TO SOILS ON-SITE:

USE OF MAXIMUM CONCENTRATIONS IN EVALUATING THE PLAUSIBLE MAXIMUM EXPOSURE SCENARIOS HAS BEEN DISCUSSED ABOVE. ALSO AS DISCUSSED, ONLY CARCINOGENIC PAHS WERE EVALUATED IN THE PHE.

INGESTION OF WATER BY RESIDENTS AND WORKERS:

RISKS FROM INGESTION OF GROUNDWATER FROM THE WATER TABLE, INTERMEDIATE UNIT AND UPPER SHARON UNIT WERE PRESENTED SEPARATELY. IF THE CONTAMINATED WATER TABLE AND INTERMEDIATE UNIT ARE NOT CLEANED UP, THE POTENTIAL EXISTS THAT THE UPPER SHARON COULD BECOME CONTAMINATED.

SECTION 4.0 FEASIBILITY STUDY REPORT

SECTION 4.1 GENERAL

ADEQUATE CONTROLS SUCH AS DEED RESTRICTIONS IN THE USE OF THE SITE ARE REQUIRED TO ASSURE LONG TERM PROTECTIVENESS OF THE SELECTED ALTERNATIVES. THE SCENARIO OF FUTURE RISKS TO ON-SITE RESIDENTS REPRESENTS THE WORST CASE SCENARIO AND JUSTIFIES A REMEDIAL ACTION FOR THE SUMMIT NATIONAL SITE. THE RISKS ASSOCIATED WITH SUCH AN EXPOSURE SCENARIO ADDRESS THE MAIN SOURCE OF CONTAMINATION. THE REMEDIAL ALTERNATIVE IS DESIGNED TO MINIMIZE THREATS AT THE SOURCE LOCATION AND AFFECTED AREAS (I.E. CEMENT PLANT AND EASTERN PERIMETER).

SECTION 4.2 REMEDIAL TECHNOLOGY DEVELOPMENT

NO ISSUES RAISED BY THE PRPS.

SECTION 4.3 SCREENING OF REMEDIAL TECHNOLOGIES SOIL ACCESS RESTRICTIONS COMMENT:

THE PRPS STATE THAT THE SITE EXTENSION IS UNNECESSARY.

U.S. EPA'S RESPONSE:

THE SITE EXTENSION IS NOT BASED SOLELY ON SOIL REMEDIATION. THE BOUNDARIES WERE ALSO EXTENDED TO CONTAIN THE GROUNDWATER PLUME IN THE WATER TABLE AQUIFER AND ALSO TO IMPLEMENT THE OTHER COMPONENTS OF THE SELECTED ALTERNATIVE SUCH AS THE SLURRY WALL, CAP, AND REROUTING OF THE LOWER EASTERN AND SOUTHERN DITCHES.

CONTAINMENT COMMENT:

ACCORDING TO THE PRPS, A SOIL COVER IS MORE APPROPRIATE THAN A RCRA CAP.

U.S. EPA'S RESPONSE:

THE FS DOES EVALUATE SURFACE CONTROLS IN THE CONTEXT OF CONTAINMENT OF CONTAMINATED SOIL/SEDIMENT/SUBSURFACE WASTE TECHNOLOGIES. REVEGETATION AND SOIL COVER WERE CARRIED THROUGH CHAPTER 3, AND REVEGETATION WAS CARRIED THROUGH CHAPTER 4 AND INTO THE ASSEMBLY OF ALTERNATIVES. SURFACE SEALING AND SOIL STABILIZATION WERE SCREENED OUT IN CHAPTER 3 PRIMARILY SINCE THEY ARE BOTH TEMPORARY SOLUTIONS AND DO NOT MEET THE GOALS OF THE NCP. LEACHING OF CONTAMINANTS IS AN ADDITIONAL FACTOR USED TO SCREEN OUT SOIL STABILIZATION. A SOIL COVER DOES NOT MEET THE CRITERIA FOR PROTECTIVENESS OR LONG TERM EFFECTIVENESS BASED ON THE WASTE CHARACTERISTICS AT THE SUMMIT NATIONAL SITE. THE REQUIREMENTS TO REPAIR TOPSOIL AND REVEGETATE EVERY TEN YEARS IS A COMMON INDUSTRY STANDARD THAT IS BASED ON PAST EXPERIENCE AND USED AS A BASIS FOR ESTIMATING OPERATING AND MAINTENANCE COSTS. WHETHER REPAIR IS THE RESULT OF POOR MANAGEMENT OR OTHER FACTORS IS NOT AT ISSUE.

REMOVAL COMMENT:

THE PRPS CLAIM THAT RISK NUMBERS AND THE SCENARIO FOR SUBSURFACE SOILS ARE ILLOGICAL. BURIED DRUM DELINEATION NEEDS TO BE DEFINED ADEQUATELY.

U.S. EPA'S RESPONSE:

ADDITIONAL DELINEATION AND ESTIMATES OF NUMBERS OF DRUMS WILL BE PERFORMED DURING THE PRE-DESIGN INVESTIGATION. THE DATA GATHERED DURING THE REMEDIAL INVESTIGATION REPRESENT THE BEST ESTIMATE AND EFFORT. THE ACTUAL NUMBER OF DRUMS CAN ONLY BE DETERMINED THROUGH EXCAVATION AND REMOVAL. THIS ACTION IS MORE APPROPRIATE DURING THE REMEDIAL ACTION. PRIOR TO REMEDIAL ALTERNATIVE IMPLEMENTATION DURING THE DESIGN PHASE, THE NUMBER OF DRUMS WILL BE BETTER ESTIMATED TO DEVELOP COSTING AND DESIGN PLANS. THE SCENARIO OF EXPOSURE TO SUBSURFACE SOILS THROUGH DERMAL CONTACT AND INCIDENTAL INGESTION IS APPROPRIATE TO CONSIDER WHEN DEFINING THE EXTENT TO WHICH "HOT SPOT" SOILS REQUIRE TREATMENT.

INITIALLY, THE GRID SQUARE (2-4) WITH A 1×10^{-4} RISK WAS NOT INCLUDED IN THE "HOT SPOT" SOILS REMOVAL SCENARIO. HOWEVER, AFTER FURTHER CONSIDERATION OF SOIL BLOCK UNITS EXCEEDING THE CANCER RISK OF 1×10^{-5} , A

MORE PROTECTIVE SOIL REMOVAL SCENARIO HAS BEEN DEVELOPED. SOIL BLOCK UNITS WITH A RISK LESS THAN 10^{-5} RISK ARE SHALLOW (0-2 FT) AND WILL BE COVERED BY A CAP TO PREVENT DIRECT CONTACT AND EXPOSURE THROUGH INGESTION. THE CONCEPT OF ADDRESSING "HOT SPOT" SOILS IS NOT TO PROVIDE COMPLETE TREATMENT BUT TO PROVIDE A COST EFFECTIVE ALTERNATIVE THAT ELIMINATES A SUBSTANTIAL SOURCE OF RISK WHILE BEING COST-EFFECTIVE. THE "HOT SPOT" DELINEATION IS LOCATED PRIMARILY ON THE SOUTHERN HALF OF THE SITE WHERE THE BURIED DRUMS WERE IDENTIFIED.

THE DELINEATION OF "HOT SPOT" SOILS FOR REMOVAL AND THE DELINEATION OF THE AREA TO BE CAPPED ARE BASED ON TWO DIFFERENT ISSUES. TREATMENT OF "HOT SPOTS" TO ADDRESS REDUCTION IN MOBILITY, TOXICITY, AND VOLUME IS BASED ON A COST EFFECTIVE VOLUME, THAT REDUCES A MAJORITY OF RISK. PLACEMENT OF THE CAP IS REQUIRED OVER THE ENTIRE SITE TO CONTAIN TREATED SOILS AND REDUCE EXPOSURE TO UNACCEPTABLE SOIL CONTAMINATION.

COMMENT:

ACCORDING TO THE PRPS, THE STORAGE CAPACITY IS INSUFFICIENT FOR STOCKPILING SOILS.

U.S. EPA'S RESPONSE:

THE TEMPORARY STAGING OF SOILS UNDER THE POLE BUILDING SHOULD NEVER REACH THE CAPACITY OF THE BUILDING. SOILS WILL BE STORED TEMPORARILY (SEVERAL DAYS) UNTIL FED INTO THE INCINERATOR. THIS IS AN ONGOING PRACTICE AND NOT INTENDED TO SERVE AS LONG-TERM STORAGE.

COMMENT:

THE PRPS CLAIM THAT THE 85,000 C.Y OF SOIL WAS INCREASED ARBITRARILY TO 105,000 C.Y.

U.S. EPA'S RESPONSE:

SOIL BLOCKS EXCEEDING CANCER RISKS OF 1×10^{-6} ARE EQUIVALENT TO 85,000 C.Y. WHEN CONSIDERING COST SENSITIVITY AND TECHNICAL IMPLEMENTABILITY, THE LOCATION OF CERTAIN CONTAMINATED SOIL BLOCKS RESULT IN THE UNAVOIDABLE REMOVAL OF CLEAN SOIL BLOCKS. TO WORK AROUND SUCH BLOCKS IS IMPRACTICABLE AND CUMBERSOME RESULTING IN INCREASED CONSTRUCTION COSTS. THE 105,000 C.Y. OF SOILS PROPOSED FOR REMEDIAL RESULTS IN THE MOST COST-EFFECTIVE AND PRACTICABLE METHOD FOR THE CONTAMINATED VADOSE SOIL REMOVAL SCENARIO.

COMMENT:

THE PRPS STATE THAT EXCAVATION OF ALL UNCONSOLIDATED MATERIAL IS UNREALISTIC.

U.S. EPA'S RESPONSE:

THE ALTERNATIVE TO REMOVE ALL UNCONSOLIDATED MATERIAL REPRESENTS THE MAXIMUM EXTENT OF TREATMENT POSSIBLE AT THE SITE RESULTING IN NO RESIDUAL CONTAMINATION THAT ELIMINATES LONG-TERM MANAGEMENT. THIS ALTERNATIVE IS EXTREMELY DIFFICULT TO IMPLEMENT AND IS VERY COSTLY.

SURFACE WATER AND GROUNDWATER TREATMENT COMMENT:

THE PRPS STATE THAT THE INFLUENT IS NOT CHEMICALLY CHARACTERIZED.

U.S. EPA'S RESPONSE:

THE CHEMICAL CHARACTERISTICS OF THE INFLUENT ARE CURRENTLY BASED ON SURFACEWATER AND GROUNDWATER ANALYTICAL RESULTS FROM THE REMEDIAL INVESTIGATION. A TREATABILITY STUDY COULD BE CONDUCTED PRIOR TO INSTALLING THE TREATMENT PROCESS TO ASSURE IT'S REMOVAL EFFICIENCY RATE. THIS TREATABILITY STUDY WILL BE CONDUCTED DURING THE REMEDIAL DESIGN PHASE. IN WASTE WATER TREATMENT DESIGN, THERE ARE KEY COMPOUNDS THAT PROCESS DESIGN ENGINEERS LOOK FOR, THAT IF PRESENT AT CERTAIN CONCENTRATIONS, CAN CREATE PROBLEMS FOR TREATMENT SYSTEMS. NO SUCH CHEMICALS AT RESTRICTIVE CONCENTRATIONS HAVE BEEN DETECTED AT THE SUMMIT NATIONAL SITE.

GROUNDWATER OPERABLE UNIT VERTICAL BARRIER:
COMMENT:

THE PRPS BELIEVE THAT HYDRAULIC CONTAMINANT AT THE SITE PERIMETER WOULD ACCOMPLISH THE SAME OBJECTIVE AS THE CONTAINMENT WALL.

U.S. EPA'S RESPONSE:

DURING THE TECHNOLOGY SCREENING PROCESS LEADING TO ALTERNATIVE DEVELOPMENT THE USE OF HYDRAULIC CONTAINMENT THROUGH OTHER PROCESS OPTIONS UNDER VERTICAL BARRIERS WAS EVALUATED. THE SOIL BENTONITE SLURRY WALL WAS THE ONLY OPTION THAT PASSED THROUGH SCREENING FOR ITS ABILITY TO MINIMIZE LATERAL MIGRATION OF CONTAMINATED GROUNDWATER. AN ADDITIONAL FEATURE OF THE SLURRY WALL IS THAT IT CAN PREVENT LATERAL MIGRATION OF GROUNDWATER FROM CLEANUP-GRADIENT SOURCES INTO THE CONTAMINATED AREA BENEATH THE SITE. THE PERMEABILITY OF 10^{-7} CM/SEC THAT CAN BE ACHIEVED BY SOIL BENTONITE SLURRY WALL DOES NOT DEPEND ON THE PERMEABILITY OF NATURAL SOILS USED. THE HIGHER THE PERMEABILITY OF NATURAL SOILS, THE HIGHER THE PORTION OF BENTONITE THAT WILL BE USED. THE 10^{-6} PERMEABILITIES OF SURROUNDING SOILS PRESENTS THE LOWER RANGE. THE HIGHER RANGE OF PERMEABILITIES WAS ESTIMATED AT 10^{-3} .

BASED ON CURRENT AVAILABLE HYDROGEOLOGIC DATA, DRAINS (HYDRAULIC CONTROL) MAY NOT BE TECHNICALLY FEASIBLE DUE TO THE HYDRAULIC CONDUCTIVITY OF ON-SITE SOILS. AN ADDITIONAL CONCERN IS THAT DRAINS WOULD NOT BE EFFECTIVE IN DEWATERING THE WATER TABLE ADEQUATELY TO PREVENT DOWNWARD VERTICAL MIGRATION OF CONTAMINANTS INTO THE UPPER INTERMEDIATE UNIT.

LOW PERMEABILITY COVER
COMMENT:

THE PRPS CLAIM THAT A LOW PERMEABILITY SOIL COVER IS NOT NECESSARY SINCE SOIL LEACHABILITY IS LOW AND GROUNDWATER TREATMENT IS LESS COSTLY THAN CONSTRUCTING THE CAP.

U.S. EPA'S RESPONSE

USING THE CURRENT QUALITY OF THE WATER TABLE AQUIFER ONE CAN ASSUME THAT THE CONTAMINATED SOILS OR BURIED WASTES LEACH SUFFICIENT CONCENTRATIONS OF CHEMICALS TO NECESSITATE TREATMENT. THOSE LEVELS, HOWEVER, ARE NOT A PROBLEM FOR TREATMENT.

BY NOT USING A LOW PERMEABILITY COVER, THE COLLECTION AND TREATMENT OF CONTAMINATED GROUNDWATER WILL CONTINUE INDEFINITELY. AT SOME POINT IN TIME, THIS PERPETUAL TREATMENT WOULD EXCEED EVENTUALLY THE COST OF A RCRA CAP.

GROUNDWATER EXTRACTION/COLLECTION
COMMENT:

ACCORDING TO THE PRPS, THE FS HAS ARBITRARILY INCLUDED THE LOW PERMEABILITY (RCRA) CAP AND CONTAINMENT WALL WITH THE GROUNDWATER COLLECTION SYSTEM.

U.S. EPA'S RESPONSE:

THE RCRA CAP IS AN INTEGRAL COMPONENT OF THE GROUNDWATER EXTRACTION AND GRADIENT STABILIZATION SYSTEM INCLUDED WITH THE PROPOSED ALTERNATIVE, NOT AN ARBITRARY ADDITION AS THE COMMENTS SUGGEST. GROUNDWATER REMEDIATION AND GRADIENT CONTROL CONSIDERATIONS ARE PRESENTED IN APPENDIX B AND C OF THE FS.

SINGULAR COMPONENT TECHNOLOGIES SUCH AS PIPE OR MEDIA DRAINS, TYPICAL EXTRACTION WELLS AND RADIAL COLLECTION WELLS PASSED CHAPTER 3 SCREENING AS BEING ABLE TO ACHIEVE THE GENERAL RESPONSE GOAL ESTABLISHED AND SUITABLE TO SITE CHARACTERISTICS. ONLY RADIAL COLLECTION WELLS WERE ELIMINATED IN CHAPTER 4 OF THE FS, DUE TO HIGH COST AND UNACCEPTABLE HEALTH AND SAFETY RISK TO WORKERS.

THE GROUNDWATER EXTRACTION SYSTEM DESIGNED TO DEWATER THE WATER TABLE AQUIFER WAS DEVELOPED BASED ON CONCEPTS

PRESENTED IN APPENDICES B AND C OF THE FS REPORT. THE POINT THAT THE COMMENTER MAKES WHERE REDUCTION OF THE WATER TABLE BY GREATER THAN ONE FOOT WOULD CAUSE A GRADIENT REVERSAL IS ONLY TRUE IN ONE AREA; THAT IS THE EXTREME SOUTHERN PORTION OF THE SITE. THIS IS BECAUSE THE BASE OF THE WATER TABLE IS SLIGHTLY LOWER AND THE PIEZOMETRIC SURFACE ON THE UPPER SHARON UNIT IS SLIGHTLY HIGHER. AT OTHER LOCATIONS AT THE SITE MUCH MORE DRAWDOWN IS NECESSARY.

PERIMETER DRAINS WERE NOT CONSIDERED FOR ALTERNATIVES THAT INCLUDED PARTIAL REMOVAL OF SOILS. THEY WERE SCREENED OUT DUE TO EXTENSIVE COSTS TO INCLUDE WALL SHORING, DEWATERING, AND SAFETY DURING INSTALLATION. CONSTRUCTABILITY OF A DRAIN SYSTEM WOULD ALSO BE VERY DIFFICULT. ALSO PERIMETER DRAINS ALONE ARE INADEQUATE DUE TO LIMITED RADIUS OF INFLUENCE DUE TO HYDRAULIC CONDUCTIVITIES AT THE SITE. IN ALTERNATIVE 7 WHEN ALL UNCONSOLIDATED MATERIALS WERE REMOVED, GRAVEL TRENCH DRAINS WERE USED SINCE THEY WILL BE CONSTRUCTED SIMULTANEOUSLY DURING THE BACKFILLING OPERATION.

THE GROUNDWATER EXTRACTION AND GRADIENT CONTROL SYSTEM THE U.S. EPA HAS PROPOSED FOR ITS RECOMMENDED ALTERNATIVE IS COMPLEX BUT IS BASED ON THE AVAILABLE DATA. MORE DATA NEEDS TO BE COLLECTED DURING THE REMEDIAL DESIGN TO REFINE THE SYSTEM. IF ADDITIONAL HYDROGEOLOGIC DATA COLLECTED DURING THE DESIGN PHASE SHOWS A MORE PERMEABLE SYSTEM EXISTS THAN SOME OF THE CURRENT DATA SUGGESTS, THEN THE NUMBER OF WELLS COULD BE REDUCED AND COSTS WOULD ALSO BE LOWERED. IF FEWER DRAINS WERE ALSO REQUIRED THEY MAY PROVE TO BE MORE ECONOMICAL. THE COMMENTERS STATEMENT THAT THE COSTS FOR THE PROPOSED EXTRACTION SYSTEM ARE UNDERESTIMATED BY A FACTOR OF THREE IS AN UNSUPPORTED OPINION. COSTS ARE BASED ON PUBLISHED REFERENCE AND INDUSTRY CONTACTS WHICH RESULTED IN WHAT U.S. EPA BELIEVES ARE ADEQUATE ESTIMATES TO COMPLY WITH +50 AND -30 RELIABILITY.

AGAIN THE COMMENTER NOW SAYS THEY DO NOT BELIEVE THAT INTERMEDIATE ZONE GROUNDWATER EXTRACTION WELLS ARE WARRANTED OR ADVISABLE. THIS IS THE THIRD INSTANCE THE COMMENTER CHANGES THEIR TECHNICAL OPINION ON THIS ISSUE.

IN SUMMARY U.S. EPA HAS STATED THAT MORE DATA ARE NECESSARY TO REFINE THE PROPOSED GROUNDWATER EXTRACTION SYSTEM. THAT DATA WILL BE COLLECTED DURING DESIGN AND MAY OR MAY NOT HAVE SIGNIFICANT CHANGES ON COST OR TECHNOLOGIES OF THE CURRENTLY PROPOSED SYSTEM.

4.4 ALTERNATIVES DEVELOPMENT

GENERAL COMMENT:

THE PRPS CLAIM THAT THE FEASIBILITY STUDY FAILS TO EVALUATE THE REDUCTION OF RISK ASSOCIATED WITH EACH ALTERNATIVE.

U.S. EPA'S RESPONSE:

ALTERNATIVES 3 THROUGH 9 ELIMINATE RISKS ASSOCIATED WITH THE SITE, ALTHOUGH THROUGH DIFFERENT COMBINATIONS OF TREATMENT, ENGINEERING, AND INSTITUTIONAL CONTROLS. SINCE ALL EXPOSURE ROUTES ARE ELIMINATED, NO RESIDUAL RISKS WOULD OCCUR PROVIDING THERE IS NO INTERFERENCE OR FAILURE OF THE COMPONENTS OF THE REMEDIAL ALTERNATIVE.

COMMENT:

THE PRPS STATE THAT THE RESIDUAL RISK IN ALTERNATIVE 5 IS MINUTE.

U.S. EPA'S RESPONSE:

IT IS TRUE THAT THE EXPOSURE PATHWAY TO UNTREATED SOILS IS ELIMINATED BY THE INSTALLATION OF THE MULTI-LAYER CAP. THE PURPOSE OF RISK NUMBERS FOR EACH SOIL BLOCK IS TO DEFINE THE "HOT SPOT" SOILS AND THE EXTENT OF RESIDUAL CONTAMINATION ALLOWABLE AT THE SITE. THE OVERALL RISK ASSOCIATED WITH THE REMAINING CELLS IS 3 X 10⁻⁵, WHICH IS ACCEPTABLE FOR CONTAINMENT RATHER THAN TREATMENT.

COMMENT:

THE PRPS PREFER THAT THE EFFECTIVENESS OF THE ALTERNATIVES BE EVALUATED IN TERMS OF CONTAMINANT MASS:

U.S. EPA'S RESPONSE

AS PREVIOUSLY DISCUSSED, CONTAMINANT MASS IS NOT INDICATIVE OF HEALTH RISKS. IN ADDITION, CONTAMINANT MASS DOES NOT RELATE TO CLEAN-UP STANDARDS AND THEREFORE, THIS CRITERIA WOULD BE IN APPROPRIATE TO EVALUATE EFFECTIVENESS.

COMMENT:

THE PRPS PROPOSE THAT INTERMEDIATE ALTERNATIVES BETWEEN ALTERNATIVE 2 AND 3 NEED TO BE EVALUATED.

U.S. EPA'S RESPONSE:

ALTERNATIVE 2 REPRESENTS THE MINIMUM ACTION WITH NO TREATMENT OR CONTAINMENT OPTIONS. ALTERNATIVE 3 REPRESENTS CONTAINMENT WITH TREATMENT OF THE MAJOR SOURCE OF CONTAMINATION WHICH IS DRUMS FOR THIS PARTICULAR SITE. U.S. EPA CONSIDERS THE RANGE BETWEEN ALTERNATIVES 2 AND 3 REASONABLE AND APPROPRIATE.

DETAILED ANALYSIS OF ASSEMBLED ALTERNATIVES EFFECTIVENESS AND IMPLEMENTABILITY.

COMMENTS MADE BY THE PRPS REGARDING REDUCTION IN RISKS, TOTAL MASS OF CONTAMINANTS, VOLUME OF 430,000 C.Y. AND COST EFFECTIVENESS HAVE BEEN PREVIOUSLY DISCUSSED IN THIS DOCUMENT.

COMMENT:

THE PRPS CLAIM THAT A SOIL COVER IS LESS COSTLY THAN A MULTI-LAYER CAP.

U.S. EPA'S RESPONSE:

AS PREVIOUSLY DISCUSSED, A SOIL COVER DOES NOT PROVIDE PROPER. CONTAINMENT DUE TO ITS POTENTIAL FOR CRACKING AND LEAKING CAUSED BY NATURAL FREEZE/THAW CYCLES, AND IT ALSO DOES NOT ELIMINATE INFILTRATION WHICH IS AN IMPORTANT FUNCTION OF THE CAP.

THE INITIAL SCREENING OF AVAILABLE ALTERNATIVE IS PRIMARILY BASED ON ITS ABILITY TO BE EFFECTIVE AND IMPLEMENTABLE. COST EFFECTIVENESS IS A SIGNIFICANT FACTOR BUT IT IS NOT THE PRIMARY DECISIVE FACTOR. IF TWO OR MORE ALTERNATIVE PROVIDE SIMILAR RESULTS IN EFFECTIVENESS AND IMPLEMENTABILITY, THEN COST EFFECTIVENESS COULD BE USED AS THE DECISIVE FACTOR. HOWEVER, THIS IS NOT THE CASE FOR A SOIL COVER VERSUS A MULTI-LAYER CAP BASED ON THE WASTE CHARACTERISTICS AT THE SUMMIT NATIONAL SITE.

COST ANALYSIS

COMMENT:

ACCORDING TO THE PRPS, THE COST ANALYSIS FAILS TO PROVIDE CONSTRUCTION AND CAPITAL COSTS ON A YEARLY BASIS TO ACCOUNT FOR SEQUENTIAL IMPLEMENTATION OF VARIOUS COST ITEMS.

U.S. EPA'S RESPONSE:

IT IS IMPORTANT THAT ALL COSTS ARE PREPARED USING AN EQUAL AND COMPARABLE METHODOLOGY TO ALLOW FOR DIRECT COMPARISON OF ALTERNATIVES THAT CONTAIN DIFFERENT TECHNOLOGIES AND ARE IMPLEMENTED OVER DIFFERENT PERIODS OF TIME. COST ESTIMATES FOR THE ASSEMBLED ALTERNATIVES WERE PREPARED FROM COST INFORMATION INCLUDED IN THE U.S. EPA'S "COMPENDIUM OF COSTS OF REMEDIAL TECHNOLOGIES AT HAZARDOUS WASTE SITES," THE 1987 MEANS SITE WORK COST DATA GUIDE, U.S. EPA'S "REMEDIAL ACTION AT WASTE DISPOSAL SITES HANDBOOK," ESTIMATES FOR SIMILAR PROJECTS, AND ESTIMATES PROVIDED BY EQUIPMENT VENDORS.

ALL CAPITAL COSTS AND OPERATIONS AND MAINTENANCE COSTS ARE CARRIED TO A PRESENT WORTH BASED ON 30 YEARS AT 10% INTEREST RATE. THE ORDER-OF-MAGNITUDE COST ESTIMATES PRESENTED HAVE BEEN PREPARED FROM THE INFORMATION AVAILABLE AT THE TIME OF THE ESTIMATE. FINAL COSTS OF ASSEMBLED ALTERNATIVES WILL DEPEND ON ACTUAL LABOR AND MATERIAL COSTS, ACTUAL SITE CONDITIONS, PRODUCTIVITY, COMPETITIVE MARKET CONDITIONS, FINAL PROJECT SCOPE, FINAL PROJECT SCHEDULE CONTINUITY OF PERSONNEL, ENGINEERING BETWEEN THE FEASIBILITY STUDY AND FINAL DESIGN,

AND OTHER VARIABLE FACTORS. AS A RESULT, THE FINAL ALTERNATIVE COSTS WILL VARY FROM THE ESTIMATES PRESENTED IN THIS REPORT. MOST OF THESE FACTORS ARE NOT EXPECTED TO AFFECT THE RELATIVE COST DIFFERENCES BETWEEN ALTERNATIVES. FACTORS THAT MAY SUBSTANTIALLY AFFECT THE RELATIVE COST DIFFERENCE ARE DISCUSSED UNDER "COST SENSITIVITY ANALYSIS". BECAUSE OF THESE FACTORS FUNDING NEEDS MUST BE CAREFULLY REVIEWED PRIOR TO MAKING SPECIFIC FINANCIAL DECISIONS OR ESTABLISHING FINAL BUDGETS.

SECTION 5.0 - PRP'S PREFERRED REMEDIAL ACTION ALTERNATIVES.

U.S. EPA HAS ALREADY PROVIDED COMMENTS TO THE PRP'S PROPOSED ALTERNATIVE IN RESPONDING TO THE CRA'S REPORT IN THE EXECUTIVE SUMMARY. THE TWO DIFFERENCES BETWEEN U.S. EPA'S RECOMMENDED ALTERNATIVE AND THE PRP'S, ARE THE ISSUES OF THE SOIL COVER AND THE GROUNDWATER EXTRACTION/GRADIENT CONTROL SYSTEM. THE ISSUE REGARDING SOIL COVER VERSUS RCRA CAP IS FAIRLY STRAIGHT FORWARD SINCE A RCRA CAP IS A REGULATORY REQUIREMENT. U.S. EPA BELIEVES THAT SOME ADDITIONAL DISCUSSION ON THE CONTAINMENT, COLLECTION, AND EXTRACTION OF GROUNDWATER IS WARRANTED.

BASED ON CURRENT DATA AVAILABLE ON SITE HYDROGEOLOGIC CONDITIONS, THE SYSTEM PROPOSED BY THE PRPS WOULD NOT DEWATER THE WATER TABLE ADEQUATELY TO PREVENT VERTICAL DOWNWARD MOVEMENT OF CONTAMINANTS INTO THE UPPER INTERMEDIATE UNIT. FOR A SYSTEM SIMILAR TO THAT SHOWN ON FIGURE 5.1, AN UP-GRADIENT DRAIN WOULD PROBABLY NEED TO BE INSTALLED TO INTERCEPT WATER RECHARGING THE WATER TABLE AQUIFER FROM NORTH OF THE SITE. ADDITIONALLY, SEVERAL MORE NORTH-SOUTH ORIENTED DRAINS WOULD BE REQUIRED TO ADEQUATELY DEWATER THE WATER TABLE AQUIFER BASED ON CURRENT HYDRAULIC CONDUCTIVITY DATA. THE RADIUS OF INFLUENCE OF DRAINS PROPOSED ON FIGURE 5.1 IS MUCH LARGER THAN ESTIMATED BASED ON RI DATA. THE PROPOSED SYSTEM MAY BE FEASIBLE BASED ON THE REFINEMENT OF DATA DURING THE REMEDIAL DESIGN PHASE, BUT CURRENT DATA INDICATES IT WOULD NOT ACHIEVE GROUNDWATER REMEDIATION OBJECTIVES.

RI/FS COMMENTS SUBMITTED BY THE SUMMIT NATIONAL PRP GROUP - MARCH 11, 1988:

THIS DOCUMENT PRESENTS COMMENTS CONCERNING LEGAL AND TECHNICAL MATTERS.

THE LEGAL COMMENTS PRESENTED IN SECTION II HAVE BEEN ADDRESSED PREVIOUSLY IN THIS DOCUMENT UNDER THE SECTION ENTITLED "LEGAL COMMENTS". THE TECHNICAL ISSUES ARE GENERALLY BASED ON THE REPORT PREPARED BY THE PRP CONSULTANTS, CONESTOGA-RIVERS & ASSOCIATES (CRA).

THE DETAILED TECHNICAL ISSUES RAISED BY THE PRP'S CONSULTANTS, CRA, WERE PRESENTED IN ATTACHMENT E. THESE COMMENTS HAVE BEEN RESPONDED TO BY U.S. EPA IN THE PREVIOUS SECTION ENTITLED "TECHNICAL COMMENTS". IN REVIEWING THE PRP DOCUMENT, THERE ARE SOME TECHNICAL AND PROCEDURAL COMMENTS THAT WERE NOT RAISED IN THE CRA DOCUMENT. THE FOLLOWING SECTION INCLUDES RESPONSES TO THOSE COMMENTS.

SECTION 1 - INTRODUCTION

SECTION I OF THE PRP GROUP REPORT PRESENTS NUMEROUS COMMENTS THAT HAVE ALREADY BEEN ADDRESSED DURING THE DISCUSSION OF THE CRA REPORT. THE ISSUES ALREADY RESPONDED TO INCLUDE THE INTERCEPTOR AND COLLECTOR DRAIN SYSTEM, EXCAVATION OF OFFSITE SOILS WITH LOW LEVELS OF CONTAMINATION, VOLUME OF "HOT SPOT" SOILS, AND THE USE OF AN IMPERMEABLE COVER. THE COMMENTER LATER ADDRESSES EXCAVATION OF OFFSITE SOILS THAT ARE "SIGNIFICANTLY CONTAMINATED" (PAGE 6) WHICH IS INCONSISTENT WITH THEIR PREVIOUS COMMENTS ABOUT OFFSITE SOILS WITH LOW LEVELS OF CONTAMINATION (PAGE 4). IT IS NOT CLEAR EXACTLY WHAT SOILS THE COMMENTERS ARE REFERRING TO. THE PRP GROUP GOES ON TO STATE THAT THEY ARE BASICALLY IN AGREEMENT WITH U.S. EPA'S PROPOSED ALTERNATIVE. THE TWO DIFFERENCES, GROUNDWATER COLLECTION AND SOIL COVER, HAVE BEEN PREVIOUSLY ADDRESSED. THE NEED FOR AN EXPLORATORY TRENCH PROGRAM TO DELINEATE BURIED DRUMS AND THE REMOVAL OF "HOT SPOT" SOILS BASED ON MASS INSTEAD OF RISK HAVE ALSO BEEN ADDRESSED.

THE COMMENTERS NOTE THAT THE AGENCY FOR TOXIC SUBSTANCE AND DISEASE REGISTRY (ATSDR) HAS NOT PRESENTED A HEALTH ASSESSMENT. ATSDR IS CURRENTLY DEVELOPING THE HEALTH ASSESSMENT FOR THE SUMMIT NATIONAL SITE. THE HEALTH ASSESSMENT IS BASED ON THE REMEDIAL INVESTIGATION AND FEASIBILITY STUDY REPORT. THE HEALTH ASSESSMENT WILL BE COMPLETED BY THE TIME THIS RECORD OF DECISION IS SIGNED BY THE U.S. EPA.

SECTION II:

THIS SECTION REFERS TO LEGAL MATTERS WHICH HAVE BEEN PREVIOUSLY ADDRESSED.

SECTION III:

THIS SECTION PRESENTS SPECIFIC COMMENTS ON THE RI REPORT. ALL ISSUES PRESENTED IN THIS SECTION HAVE BEEN RESPONDED TO DURING THE REVIEW OF THE CRA REPORT. THESE INCLUDE COMMENTS ON "OTHER POTENTIAL SHORTCOMINGS" NUMBERS 1-3 AND 5-16. THE PRP COMMENT NO. 4 CONCERNING ADJACENT SUBSURFACE SOIL SAMPLES NEEDS FURTHER CLARIFICATION. THE TWO FOOT VERTICAL INTERVAL USED FOR SOIL CHARACTERIZATION REPRESENTS A COMMON SAMPLE INTERVAL (SPLIT SPOON SAMPLES). ALSO AS PREVIOUSLY DISCUSSED, THIS WILL PROVIDE 192 2-FT. THICK SOIL UNITS FOR EVALUATION AT THE SITE, WHICH WERE DEEMED SUFFICIENT. THE FACT THAT CERTAIN SOILS WERE LOOSE SUCH AS FILL, AND A 3 OR 4 FT. INTERVAL WAS REQUIRED TO OBTAIN SUFFICIENT SAMPLE VOLUME IS BEYOND CONTROL. THE ADJACENT SPLIT SPOON SAMPLES WERE TAKEN VERTICALLY AND MAY IN FACT REPRESENT AN INTERVAL LARGER THAN 2 FEET.

SECTION IV:

THIS SECTION PRESENTS SPECIFIC COMMENTS ON THE FS REPORT. ALL ISSUES PRESENTED IN THIS SECTION HAVE BEEN RESPONDED TO DURING THE REVIEW OF THE CRA REPORT. THESE INCLUDE COMMENTS OR DEFICIENCIES NUMBERED 1 THROUGH 23.

GENERAL COMMENTS WERE MADE STATING THAT THE FS DID NOT PROVIDE APPLICABLE SCREENING OF TECHNOLOGIES. THE IDENTIFICATION AND INITIAL AND DETAILED SCREENING OF TECHNOLOGIES ALLOWS FOR A MORE THOROUGH EVALUATION OF APPLICABLE REMEDIAL TECHNOLOGIES. CHAPTER 3 OF THE FS SCREENS TECHNOLOGIES ON THE BASIS OF THEIR COMPATIBILITY WITH SITE CONDITIONS AND WASTE CHARACTERISTICS. THOSE APPLICABLE TECHNOLOGIES ARE THEN SCREENED WITH RESPECT TO EFFECTIVENESS, IMPLEMENTABILITY, AND COST. THIS SCREENING PROCESS IS IN ACCORDANCE WITH THE NCP AND U.S. EPA'S FS GUIDANCE.

COMMENT:

THE PRPS STATE THAT TECHNOLOGIES SUCH AS POLYMERIZATION, BIORECLAMATION, AND CRITICAL FLUID EXTRACTION WERE ELIMINATED BECAUSE OF THEIR EXPERIMENTAL AND UNPROVEN NATURE, YET IN-SITU VITRIFICATION WAS RETAINED.

U.S. EPA'S RESPONSE:

CERTAIN TECHNOLOGIES WERE NOT SCREENED OUT NOT BASED SOLELY ON ITS EXPERIMENTAL AND UNPROVEN NATURE BUT ALSO THE UNCERTAINTY OF ITS COMPATIBILITY WITH WASTE CHARACTERISTICS. SARA SECTION 105 AUTHORIZES THE USE OF INNOVATIVE TECHNOLOGIES THAT ARE APPROPRIATE FOR UTILIZATION IN RESPONSE ACTIONS. VITRIFICATION APPLIES TO SOIL REMEDIATION AND APPEARS PROMISING IN ITS APPLICATION TO HAZARDOUS WASTE SITE REMEDIATION. HOWEVER, FOR THIS PARTICULAR SITE, INCINERATION WAS SELECTED AS THE PREFERRED TREATMENT TECHNOLOGY BASED ON FEASIBILITY AND IMPLEMENTABILITY.

COMMENT:

THE COMMENTERS NOTED THAT THE DETAILED ANALYSIS OF ALTERNATIVES DOES NOT INCLUDE THE PROPER CRITERIA BY THE NCP.

U.S. EPA'S RESPONSE:

THE FS FOR THE SUMMIT NATIONAL SITE IS CONSISTENT WITH SARA AND U.S. EPA'S OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE (OSWER). DIRECTIVES FOR EVALUATION OF ALTERNATIVES. THE DETAILED ANALYSIS FOLLOWS U.S. EPA'S EVALUATION CRITERIA. EFFECTIVENESS INCLUDES AN EVALUATION ON PROTECTIVENESS, RELIABILITY, MEETING ARARS, AND REDUCTION IN TOXICITY, MOBILITY AND VOLUME. IMPLEMENTABILITY INCLUDES TECHNICAL FEASIBILITY, AVAILABILITY, AND ADMINISTRATIVE FEASIBILITY. FINALLY A COST ANALYSIS WHICH INCLUDES CAPITAL, OPERATIONS AND MAINTENANCE COSTS. IN CONCLUSION ALL ALTERNATIVES WERE PROPERLY EVALUATED AND IS ACCORDANCE WITH THE NCP.

COMMENT:

THE PRPS STATE THAT THE FS CANNOT BE FINALIZED WITHOUT AN EVALUATION ON COMMUNITY ACCEPTANCE.

U.S. EPA'S RESPONSE:

THE FS IS ENTITLED "THE PUBLIC COMMENT FEASIBILITY STUDY" AND HAS UNDER GONE PUBLIC REVIEW BASED ON PUBLIC COMMENTS RECEIVED BY THE COMMUNITY THERE IS NO JUSTIFIABLE CAUSE TO REOPEN THE FS.

FINALLY, SECTION 5 PRESENTS THE PRP'S PROPOSED ALTERNATIVE WHICH HAS ALREADY BEEN COMMENTED ON IN THE CRA REPORT REVIEW.